



Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

SEPTEMBER 1, 1911.

No. 6

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

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Entered at New York postoffice as mail matter of the second class.

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WILL PRICES EVER BE STABLE?

THE price of crude rubber, present and future, is more interesting to the trade than any other topic. To manufacturer, planter, importer, broker, whether he be located in Montreal or Montevideo, Penang or Paterson, Manchester or Melbourne, Akron or Aden, the question is paramount. Who makes the prices when they are made? Whether or not the law of supply and demand is more potent than speculative influence? is beside the question if only there were any degree of certainty about either the ups or the downs. Two dollar rubber, even three dollar rubber, does not matter if only it persist for a reasonable period. The present comparatively low price of rubber can be of no advantage to the manufacturer for a long time to come. A year of rubber at \$1.08 to \$1.15 would be none too long to enable makers of rubber goods to adjust their prices after a period of \$3 rubber. The price is immaterial if only it be somewhere near permanent. When one remembers that in 1902 the

price of upriver fine was 76 cents, that three years later its average was 52 cents higher, that still three years later it had dropped off 30 cents, that two years later still it jumped \$2.24 higher than in 1902, and then sagged back some \$2 a pound, it will be seen that buyers were perforse speculators.

The Amazonian producers do not want this sort of uncertainty. It is exceedingly hard on the industry there for them to see \$3 rubber for a time and be practically millionaires and then \$1 rubber and be "broke." No one can blame them for trying to corral the surplus that at least \$1.50 be realized. Nor, were they able to insure that price for, say, five years, would there be the slightest objection on the part of the rubber manufacturers.

It would, at first blush, seem as if Brazil's opportunity would be when rubber was high and there was plenty of money. Such is human nature, however, that the reverse is true. It is catastrophies that bring out what is in man or people. The low price of rubber, the necessity for increased revenue will be the spur that will urge Brazilian rubber producers to improved business methods, lower first costs, planting, etc., that they may compete with the rest of the rubber producing world.

THE RUBBER MARKET CHANGING.

THAT the marketing of crude rubber is likely to undergo notable changes in the next few years will hardly be disputed except by those who desire no change.

Plantation rubber in thousands of tons, free from sand, bark, mud, stones and water has started the whole wild rubber world toward the production of gum equally clean, equally dry.

Time was when no rubber manufacturer would accept washed crude rubber. He feared, and sometimes justly, mixtures of less valuable sorts, difficult of recognition except in the cure. Washed rubbers are today used everywhere, and the user finds that they are not as likely to be adulterated as are the wild sorts.

In this evolutionary period, when crude rubber is gradually working up to higher and more stable levels, it is perhaps possible that American listing on a stock exchange is in the line of real progress. However that may be, the story of the Produce Exchange by its able president and the views of some rubber manufacturers in another column, cannot fail to be of more than ordinary interest.

RUBBER INVESTORS FRIGHTENED.

MANY conditions are conspiring to fill with fear the hearts of European investors in rubber plantation stocks.

Foremost is the exasperating way in which the price of crude rubber clings to the dollar level, nor does the fact that rubber planting is extremely profitable, even at this low price, abate their fears.

Then there is synthetic rubber, not rumors of it, but actual exhibitions of process and product, by men who must be taken seriously. So it happens that many are selling out even at a loss. Those who cannot find a market at satisfactory prices are beginning a campaign of inquiry and criticism. For the first time they wish more light upon plantation expenditures of every sort. They studiously compare production returns for Ceylon, the Malay States and Java; they write letters of complaint, of advice, and the banner companies, as Vallambrosa, continue paying almost unbelievably big dividends.

SYNTHETIC RUBBER EFFECTS.

THE bugaboo of the rubber planter, synthetic rubber, has arrived at last, not as a fearsome dream, but as an actuality. Two companies with laboratories in England produce it at will. Not in ton lots, to be sure, and not of the quality of up river fine, but real rubber nevertheless and at a cost, if their figures are correct, that points to commercial possibilities.

It had always been supposed that such a discovery would immediately put millions into the pockets of the discoverers, and put out of business those who gather from nature's sources. There is no indication that either happening is imminent. It will be a long time, under the most favorable circumstances, before the laboratories can be turned into factories, and a production say as great as that of guayule is reached. Or supposing within one or two years such amount were marketable, would it not be absorbed with ease as were guayule, the higher grades of reclaimed rubber, and the mineral plastics, and would not the only marked effect be a steadyng of the market? Furthermore, the pioneers in extracting and treating guayule, pontianak and in high grade reclaiming, found that the well-equipped laboratories in the big rubber mills the world over were extracting, treating and reclaiming by methods imitative or original, and that some kept pace with them in production. Is it not possible that the same alert manufacturers are already making isoprene, and that one day a plant for synthetic rubber

production will be as common an adjunct to a rubber factory as the present reclaiming plant? Were this accomplished, its effect would not be to kill the business of rubber gathering, wild or planted. Reclaiming for the trade is neither killed nor handicapped by the individual reclaiming plants. If synthetic rubber enters the market it will be quietly, gradually, and with no apparent effect upon existing conditions.

NOLO CONTENDERE, \$1,000. JACKSON, NIHIL.

IN THE year 1900 there appeared in trade circles a man by the name of Jackson. Or, to be exact, he did not appear except at intervals, and then only to a selected few. He had, so it is to be assumed, improved upon the old time trade associations with their "gentlemen's agreements" by evolving "pools." According to rumor, he formed hundreds of them, pooling every sort of production from soap to suspension bridges. There was much mystery in his method of work, in the terms of agreement, and in the personnel of those whom he pooled. He had modest offices in New York, and except to those with whom he was doing business had little to say of an informing nature. To what extent his pooling operations reached no one knows. As far as the rubber trade is concerned he seems to have brought the most important of the insulated wire concerns into agreement. It is said that their pool ceased to exist some time ago, but the Federal government, nevertheless cited those concerned to court and on a general plea of *nolo contendere* fined each individual all the way from \$1,000 up. Jackson, of whose fertile brain the pool was born, is said to be in Europe. They fined the rubber men, but cannot find Jackson.

LESSONS FROM RUBBER MILL FIRES.

THE July Quarterly of the National Fire Protection Association records two recent fires in rubber manufacturing establishments. In one case the fire had started in a rubber spreader, and had steadily extended all over the machine, causing a great deal of heat and dense smoke. Thirteen sprinklers opened, the principal damage being to balloon and aero cloth in process in the spreader room. Among the recommendations based on the facts, it is remarked that ample floor drainage is important in rooms where volatile liquids are used. In this case the water seems to have been quickly carried outside the building, owing to ample drainage.

In another case a fire occurred under a large bench forty feet in length, underneath which were a few paints and oils, and oily waste or rags (as well as probably some dirty overalls). Fifteen sprinklers opened and held the fire entirely under the bench.

LOOKING AHEAD.

After conference with the managers of selling branches in all parts of the country, the president of one of the leading motor car manufacturing and vending combinations in the United States, expresses his opinion that next year's demand for automobiles will require the manufacture of not less than 210,000 power vehicles, for pleasure and light business purposes, apart from motor trucks, and that 60 per cent. of these vehicles will be for utility purposes, with a distinct advance in the number of lower priced cars sold for business and pleasure uses.

This—unless some genius comes to the front with a practical substitute—means a material increase in the demand for the hitherto indispensable rubber tire.

That the manufacturers propose to be prepared to meet it, will be apparent from the frequent reports in the columns of the INDIA RUBBER WORLD, of extensive additions to their producing facilities, made by the leading tire manufacturers.

For this important branch of the rubber manufacturing trade, future prospects, for some time to come, may therefore be regarded as satisfactory—provided the figure on which this prognosis is based, is reasonably near the mark.

EFFICIENCY AND OIL.

THE efficiency expert is abroad in the land. He tells how to turn out 100 feet of hose where one is now turning out only 90 feet. Some of his rules are interesting, some highly ingenious, and some actually work. But here is one he has so far missed—*oil the help*.

A rubber factory of the first grade uses from 7,000 to 10,000 gallons of lubricating oil a year. That runs into dollars, but nobody begrudges a penny of it. It is the best investment in the shop, for what sort of work would a machine do without oil?

It is the same exactly with the human machine. If it is to run smoothly, turning out good work day after day without squeaking at the axles, oil it. A manufac-

turing corporation in New England, not exactly in the rubber line, but at least in the rubber territory, recently gave its employes a fine oiling. It devoted a full day to it. It employs 500 people. These were gathered together, along with the wives and children of the family men—making a regiment of 1,400 souls—put on board a commodious steamer, given a delightful sail with orchestral accompaniment, landed at a cheery resort of many attractions, and supplied with coupons covering them all. A local *restaurateur* of repute was given *carte blanche* to load them to the gunwales with all the delicacies of the seashore. Afterwards, armed with their coupons, before which all gates parted and all doors opened wide, they shot the chutes, careened around the scenic railway, roller-coasted, watched the diving belles and pirouetted over waxed floors until human capacity could ask for no more.

Later in the day they were deposited as near their own doors as the trolley could take them—fatigued, but full of a great joy and oiled up for many days and weeks of cheerful toil. That was a good piece of lubrication. It cost probably \$4,000, perhaps more, but think of the wear and tear it prevented. At any rate, these particular manufacturers must believe that it pays, for they have been doing this same thing for thirty years.

This shows one good way of keeping the human machine running smoothly and effectively. There are plenty of others, and all are in the line of added efficiency.

THE COST OF ISOPRENE.

ALTHOUGH isoprene is only an intermediate product, in the manufacture of synthetic rubber, its actual cost is one of the most essential factors in any calculation bearing upon the subject.

This aspect of the case has not been overlooked by leading chemists. Some time ago Professor (now Sir William) Tilden, Dean of the Royal College of Science, London, called attention to the fact that the yield of isoprene from turpentine is very small, probably not exceeding 10 per cent., under favorable conditions. In his experiments it had been less than that rate. His researches as to synthetic rubber, going as far back as 1882, add weight to his statements.

Upon the basis of a calculation made at the time, and taking for a starting point the present New York price of 56 cents per gallon of $7\frac{1}{2}$ pounds (exactly 7.47

cents per pound), the following results would be shown:

A—1,000 pounds turpentine at 7.47 cents per pound, \$74.76. Yield 100 pounds isoprene. Cost of isoprene, 74.7 cents per pound.

According to the somewhat higher estimate of a 15 per cent. yield, claimed by an English company, there would be a relatively lower cost:

B—1,000 pounds turpentine at 7.47 cents per pound, \$74.70; yield 150 pounds isoprene; cost of isoprene, 49.8 cents per pound.

These results would have to be increased by the expense of bringing the raw material to the stage of intermediate product, and would, on the other hand, be subject to a diminution representing the proceeds of the by-product obtained up to that stage.

Upon these two vital points estimates and calculations will doubtless be submitted in due time, but in view of the prospective yield from turpentine being admittedly only 10 to 15 per cent. of isoprene, the results, as thus indicated, will form a more or less reliable point of departure for more ample investigation.

BELGIAN PROMISES FULFILLED.

AMONG the notable instances of modern progress is that made by the Congo since the Belgians as a nation have shaped its destinies.

The collector of rubber at all times formed an important element in the prosperity of the Congo Free State. In fact, that country has been regarded as having created the African rubber industry, for before its foundation, the natives of Africa hardly knew the existence of the rubber vine, or were unaware of its value.

The earliest record of rubber shipments from the Congo dates from 1887, when the total export was only 200,000 pounds. In 1909 it represented 9,000,000 pounds; this fact affording a convincing proof of the business policy, which has guided the administration of the country.

Intimately connected with this progress is the more systematic cultivation and collection of rubber, which had previously been looted from African forests in a quantity insufficient to attract capital. In the successful efforts made to develop the natural resources of the Congo, the policy of Belgium is now to emulate the progress made in Asia, where the result has not only well repaid the

European promoters and managers, but has at the same time, brought comfort and welfare to the natives who supply the labor. It is on similar lines that Belgium has been and is acting in the Congo.

Nor is Belgian control today simply a matter of bureaucracy and officialism. On the contrary, a marked personal element is aiding in establishing the necessary good feeling. The Colony was taken over by a vote of the Belgian Parliament on November 15, 1908. During the visit to the Congo in 1909 of the future king, accompanied by M. Jules Renkin, Minister for the Colony and other officials, many detailed reforms were accomplished, and comprehensive plans of future work elaborated. Various leading Belgian public men have since visited the Colony, thus keeping in touch with its condition and prospects.

Among points of special interest affecting Congo rubber, is the fact admitted by Mr. Cuthbert Christy in his recent work, "The African Rubber Industry" that since the earliest shipments, the rubber exported from the Congo has been of a far better quality than that from the British African colonies. The special requirements of plantation rubber not being well understood, the Government has spared no expense in opening botanic gardens and commencing experimental plantations.

Regarded as the impartial testimony of an English authority Mr. Christy's comments upon present conditions are of special interest. To use his own words: "My conviction, based on two journeys in Western Congo, is that what was known as the 'Congo agitation' was exaggerated for personal and party reasons, and most people who know the Congo will, I am sure, agree with me. . . . Full credit for the state of civilization existing today in the watershed of the great river has never been given to whom it is due."

THE INDIA RUBBER WORLD has at various times since 1892 dealt with the subject of the Congo. On the occasion of its annexation by Belgium it treated the matter editorially in the issue of October 1, 1908. To what extent Belgium considers its mission is being fulfilled is told in another column.

THE ANNUAL INNER TUBE CROP.

SPEAKING of rubber reclaiming, the recovery of inner tubes for automobile tires is one of the pretty parts of the business, that is, if the reclainer knows how to do it successfully. As a rule, they contain no fabric and no metal except the valve stem which is easily cut out. They are nearly "pure" and require no acid treat-

ment, no electrical metal gatherers, etc., etc. Moreover, thanks to the immensity of the motor business, worn-out tubes are gathered by the million. Figuring that there are 450,000 automobiles in commission in the United States and that an average of eight tubes is used a year, it would mean an annual crop of 3,600,000 tubes; say that the average weight of the tubes be two pounds each, the total weight would be 7,200,000 pounds. Reclaimed, it would give certainly 6,000,000 pounds of high-grade stock, mostly Pará, and capable of taking its place in eighty per cent. of the goods to-day manufactured.

RUBBER SIDEWALKS FIRST.

RUBBER pavements or roadways are very frequently advocated by those who have a broad knowledge of city needs, and of the lasting qualities of rubber as compared with any other paving material. The realization of such a dream is doubtless far away, that is the general adoption by the great cities of the world of rubber paving. It would undoubtedly add much to the comfort of those who ride, and be better for the horses. Those who ride, however, are in the minority and the day is not far distant when horses will not be allowed in the cities. There still remains the vast crowds that throng the sidewalks, the subways and the halls of office buildings. Their echoing footsteps on unyielding granite, marble, brick and concrete should stir humanitarians more than the aches of horses, or the pains of a few taxicab users. What the cities need is rubber sidewalks before they even consider rubber streets.

In a blind way the great corporations have already confessed to this need by covering decks of steamships and waiting rooms of depots with rubber paving. The rubber shod sidewalk is but an extension of the same idea.

HAMBURG OPINION UPON TRADING IN RUBBER FUTURES.

WHILE the introduction of organized trading in rubber futures has been advocated by prominent Hamburg banking houses, identified with copper, it has been pointed out by opponents of the project that what applies to copper does not necessarily apply to rubber. One difference is that there are so many descriptions of rubber, adapted for the most varied

technical purposes, while copper always remains only copper.

Recent local investigation at Hamburg showed that there is already a large unofficial business done at that point in rubber for future delivery, but, it is urged, this is no reason for throwing the article into the hands of professional speculators. Such proposals, it is considered, introduce a disquieting element into the business.

In various instances, the opinion was expressed, that any official system of business in futures, must correspond with actual business conditions. The apprehension has likewise been voiced, that the proposal, if carried out, would tend to injure the established reputation of Hamburg as the most steady and soundest rubber market in the world.

THE PASSING OF THE HORSE.

AT a time when the problem of New York public transportation is one of the most prominent questions of the day conditions in Paris, as lately described by Consul General Frank H. Mason, are of special interest.

By the terms of the forty years' concession granted the General Omnibus Company in June, 1910, all the horses on the 38 omnibus lines (with an aggregate length of 156 miles, and which in 1909 carried 115,061,498 passengers) are to be withdrawn from service by June 1, 1913. At the same time, the last steam or compressed-air tramcar will have been taken off, leaving but three systems of public passenger traffic—the autobus, electric tramways and the municipally built Metropolitan subway.

In place of horse-traction two styles of autobus have been adopted in which the upper story is discarded in favor of a spacious rear platform; the same total number of passengers (32 to 35) being carried as in the old "double-deckers." One of the two new models has on the rear wheels solid tires in three sections, sufficiently broad to minimize the wear and tear upon the pavements. Four hundred of the former and three hundred of the latter have been ordered, a portion of which have been in service this summer.

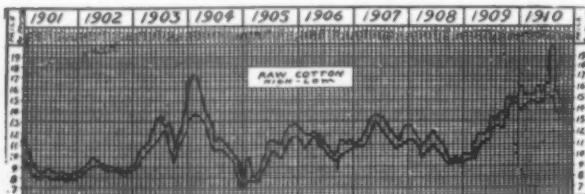
How far the adoption of autobuses will be witnessed in New York would apparently depend upon the introduction here of a model embodying the latest Paris improvements, notably the carrying of 35 passengers

without an upper deck. The latter, with its narrow and winding stairway, has been found in Europe to be inconvenient and unsafe for women and children.

Another point for consideration is that of fare. If autobuses, as in the case of those running on Fifth avenue (carrying 16 passengers below and 18 above), have to charge a ten-cent fare, then the average passenger will select one of the parallel five-cent surface car lines. Extension of Paris traveling facilities seems to be chiefly in the direction of the autobus, while in New York new subways are apparently being looked to for the solution of the problem of locomotion. Developments, and particularly results, in Paris will be watched with interest by those interested in the passenger traffic of American cities.

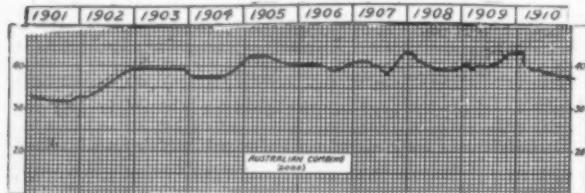
DO EXCHANGES MINIMIZE SPECULATION?

ONE of the principal arguments urged in favor of exchanges generally, and which has been quoted in favor of a rubber exchange, is the claim that such bodies minimize fluctuations in value. This conten-



FLUCTUATIONS OF RAW COTTON.

tion is disproved in the case of the most important New York exchanges. During the years 1909 and 1910 No. 2 Red Wheat rose on the New York Produce Exchange from \$1.09 to \$1.49, and then dropped to



FLUCTUATIONS OF AUSTRALIAN WOOL.

98 cents. No. 2 Red Corn has, within the last fifteen years, ranged, per bushel, from 33 to 78 cents; average price for December, 1910, having been 57 cents, against 73 cents in the preceding January; a fall of nearly 25 per cent.

Middling Upland cotton during the period from 1900 to 1910, ranged (according to Mr. Alfred B. Shepperson's "Cotton Facts") from 6.85, in 1904, to 19.75 in 1910; thus showing a fluctuation almost equalling that which, for a short time, tripled the price of rubber.

Not only have the leading exchanges failed to produce steadiness in values, but in other branches the absence of exchanges has, through the restriction of the speculative element, prevented the extreme fluctuations, which it is desired to avoid. For instance: Australian combing wool, between 1901 and 1910, fluctuated between 33 and 44 cents per pound, while, as has been shown cotton ranged from 6.85 to 19.75. These comparative fluctuations are illustrated by subjoined charts, through the courtesy of the *Textile Manufacturers' Journal*.

Wool and rubber have many points in common, notably the question of clean product, and both are, to a certain extent, influenced by London auction prices. The failure of the attempt to establish a wool exchange in New York some fifteen years ago, will still be in the memory of downtown New York merchants. The stately building at the corner of Beach street and West Broadway is all that remains of the project, which was opposed by the wool trade at large, as being detrimental and unnecessary.

THE INTEREST TAKEN IN RUBBER IN GREAT BRITAIN is easily understood when the market prices of the stocks in the various companies, based on the dividends they are paying, or are expected to pay, are considered. For instance: stock in the Selangor Company has a par value of 2 shillings (48 cents) per share, and sells at £5 (\$24.33); Pataling, with a par value of 50 cents, is quoted at \$15, and Batu Caves, par value \$5, brings \$75.

FIRE COMMISSIONER JOHNSON, of New York, has about \$750,000 available for the purchase of automobile apparatus, of which he expects to have 150 pieces within eight months. A Board has been appointed to elaborate plans for the wholesale introduction of automobile engines, in which gasoline will do away with steam pumping. Plans have been asked by the Board from manufacturers of gasoline propelled engines.

A STATISTICIAN in the United States department of agriculture has compiled a long list of articles in general use among the farmers of the country, with average prices—supplied by retail dealers—showing the advance in cost from 1899 to 1909. The prices of farm products are also compared. The net result is to show an average advance during the ten years on the articles purchased by farmers of about 12 per cent, while the purchasing power of an acre under cultivation has advanced 54 per cent. Rubber boots figure among farmers' supplies, \$3.34 being given as the average figure in 1899 and \$4.18 in 1909—the advance being 29 per cent. It might be added that whereas the average price of fine Upriver Pará rubber during 1900 was only \$1.56 per pound, it has advanced ten years later to \$2.01, or an increase of about 29 per cent.

The Free Belgian Congo.

The following article, although not strictly official, is practically the Belgian government's reply to its many critics. That much in their vast territory needed reforming they admit, while the completeness of the reforms accomplished and projected are worthy of the highest praise.

Twenty years ago the native population of Central Africa was outrageously decimated by Arab slavery, while the coast tribes were poisoned by the alcohol of the white traders. The late Congo Free State has valiantly—regardless of cost—delivered them from these two plagues under which they



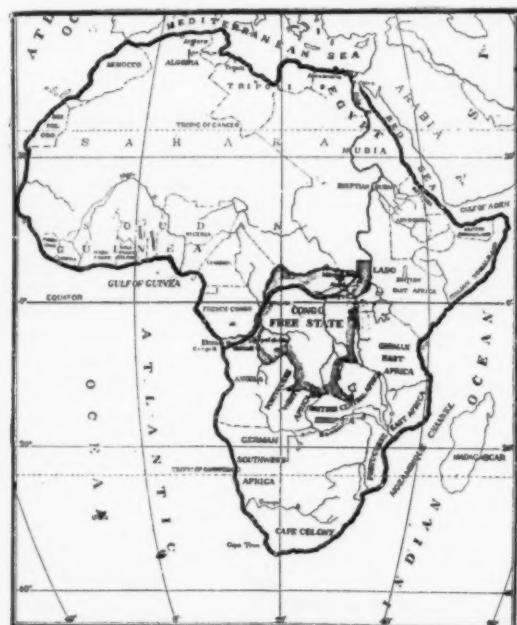
RUBBER VINES IN THE CONGO.

were perishing. But compelled, at it was, to accomplish with insignificant resources a giant's task, forced to occupy at once in all its vastness an immense territory—any part of which, left unguarded, would have become the scene of international strife—the State was forced by fate to put budget considerations foremost. But, not being backed by a metropolis, it was soon compelled, in order to obtain the necessary means, to have recourse to the natural exploitation of its territory, to collect rubber directly or through commercial companies. But, when the Congo became a Belgian colony, its metropolis being a rich country able to face the cost of organizing her new possession and determined not to stint her resources there, Belgium set out to modify a form of government which only the dire necessity of existence had established and maintained; Belgium, moreover, being essentially an industrial and exporting country, has, unlike the European countries, stood with England in its attachment to the idea of liberty in the economic realm, as in all others. Such have her ancient heritage and her geographical position made her, and such she remains from choice and of necessity.

The basis of the method of government is from now on "Free

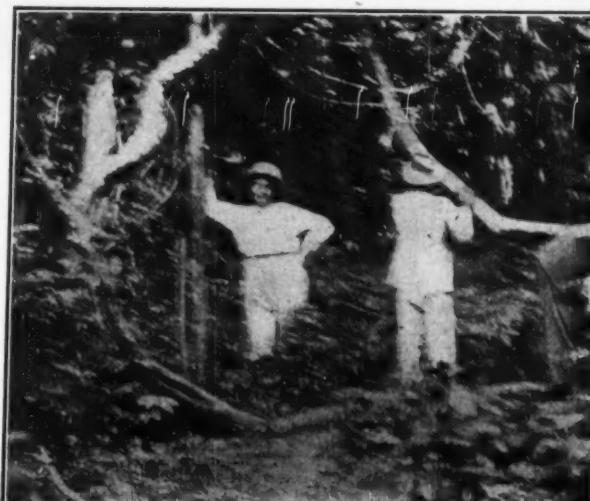
Trade backed by Free Labor," and thus it was proclaimed by M. Tibbaut in his report on the first colonial budget.

The working of the estates of the realm by monopoly is totally abandoned. The native may now gather rubber freely. He has not the slightest formality to fulfil, nor the slightest



MAP SHOWING THE CONGO FREE STATE.

tax to pay. He only has to observe the regulations issued with the object of preventing the destruction of the latex yielding plants. He can sell the product of his labor to whom he likes, and at the market price. On the other hand, the buyer—the



TAPPING LANDOLPHIA OWARIENSIS.

European or foreign trader—can settle on any tract not already leased or granted. He can buy from the native the rubber he has collected; he can also collect rubber himself or have it collected

for him. He can buy crown lands to settle on, and if the amount of land he desires does not exceed 10 hectares (25 acres) in area, he can obtain it on the spot, by putting in his demand together with a rough sketch outlining the tract. The Governor General, in strong circular letters, urges the local boards to favor such applications for land, to hasten their inspection, to simplify the formalities, to receive, inform and encourage the trader or the cultivator who wishes to settle.

If he does not wish to acquire the piece of land immediately—if he wishes to investigate the resources of the district and his chances of success before settling—he can take the land on a fifteen years' lease, with the sole proviso that he occupies it himself, or by his proxy, and that he carries on effectively his trade or industry.

The price of land is generally 20 cents per square yard within the town limits; outside, the price is \$200 per hectare (2½ acres) for land intended for trading posts, and from \$2 to \$5 per hectare, according to location for agricultural lands. The rent is 5 per cent. of the value of the ground.

The native, although free to harvest, is no longer obliged to do so. The tax paid in produce is abolished, as well as that paid in food. The government buys for cash all the produce required. The agents are no longer revictualled; they receive a food indemnity, and they must pay in cash for the foodstuffs which the natives bring them freely. There is, therefore, no more forced collection of rubber, nor forced supply of food; and there is no

suspended; but money is spreading more rapidly and easily than one would have thought. The government, since the annexation, has introduced over \$2,000,000 in money. Private individuals, certain companies, and the banks which have been established, have also introduced large amounts, and the natives have soon learned to use it. The new tax, therefore, is easily paid. The old direct and personal taxes have been replaced by one principal tax, which is from one-third to one-half what it formerly was, varying from \$1 to \$2.40, according to the districts, and



NATIVE DECORTICATING GRASS RUBBER ROOTS.

which is only imposed on full grown and able male natives. A light supplementary tax is laid on more than ordinary wealth, as indicated by the possession of several wives which, in Africa, is the surest sign of prosperity.

The colonial charter authorizes appropriate reduction of and exemption from taxes, and both are practised to a large extent.

What, now, are the taxes and fiscal obligations to which a European or other foreign trader in rubber is subjected?

Under the old *régime* he had to pay a license of \$1,000, and he was also under the costly obligation to replant rubber bearing species. Today he only has to take out a collecting permit, which costs him \$50, and is available for a year. He pays an export duty of 6 cents per lb., and a replantation duty and tax which are respectively 7½ cents, and 4 cents per lb. of rubber gathered from trees or vines, and 5 cents and 2 cents per lb. of "grass rubber." These are the only charges pertaining to this special trade.

As to the general taxes, they are certainly not excessive. The traveling merchant pays a license of \$100. The merchant, or the farmer who has a settled establishment in the colony, pays on his buildings a tax of 15 cents per square yard, which is reduced to 5 cents for such buildings as are used to house the native staff. He pays \$2 per servant, \$1 per workman, and from 40 cents to \$1 per ton for the ships he uses, according to the class they belong to.

Let us mention here that the farmer who wishes to establish rubber plantations in the Congo receives certain favors which do not affect one who only collects wild rubber. These are: reduction of the tax on each native laborer employed to 20 cents, instead of \$1; remission of tax of 7½ cents per lb. of harvested rubber, and remission of all tax on the buildings for farming or cattle growing.

The colony also busies herself with the establishment of large plantations, a special fund maintained by the replantation tax previously mentioned being devoted to this purpose.

So much for the system of government, the equity and modera-



NATIVE WITH GRASS RUBBER ROOTS.

more enforced toil for even the most urgent public works. Since the annexation, all the laborers in the railway yards have been freed and are now engaged of their own free will for a three years' term. They receive their pay in cash.

The tax is now paid in cash. The local government boards are strictly forbidden to accept payment of the tax in rubber, even when it is offered by the native. As for the districts where money has not yet been introduced, the collection of the tax is

tion of which are acknowledged by its subjects, under which reforms are willingly approved by the government, voted with enthusiasm by the assemblies, and applied in good faith.

The instructions given by the government to its agents are expressed and reiterated in peremptory terms. Their execution is closely watched. Reprimands have been administered to certain agents who had accepted payment of taxes in rubber, the natives having offered them in that form.



UNPACKING RUBBER PREPARATORY TO TRADING.

Numerous Europeans of various nationalities have already taken advantage of the new *régime* to settle in various points of the country. Nearly 200 sales or leases of crown lands have already been granted. Moreover, five important concessions were granted, as per agreement of April 14, 1911, to Messrs. Lever Brothers, Ltd., of Port Sunlight, for the working principally of oil factories. Messrs. Lever Brothers are well known for their extensive business and the philanthropic and social manner in which they carry on their work wherever they settle themselves. They are obliged by the government to establish in each concession a school and a lazaret.

On the other hand, the religious missions are spreading and rapidly accomplishing their occupation of the land. They have every support from the Belgian Government, which has been Catholic for the last 27 years.

The Protestant missions possess 46 establishments in the Congo, and since the reforms, eight sales or leases of crown

energy to the study and the treatment of trypanosis in said laboratory. Amongst the 29 lazarets established by the government, some are managed by missionaries and are entrusted to graduated religious nurses especially trained for that purpose.

Missionaries, planters and merchants freely distributed all over the territory, mold public opinion, and under this efficacious



IVORY AND RUBBER CARAVAN.

control is the methodical application of the reforms brought about.

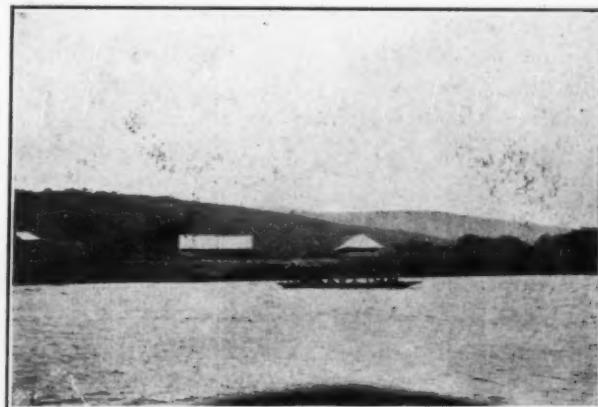
This is not the work of a day, and no government with common sense would think of upsetting the whole interior economy of an immense territory by transforming its whole administration with a touch of the magic wand. Precautions had to be taken; gradual transitions had to be arranged, and experiments had to be made. A whole staff permeated with other ideas, and accustomed to other ways, had to be rallied, instructed and directed, and that at enormous distances. It was therefore decided to proceed gradually in the work of reorganization. The ordinance of March 22, 1910, divided the colony in three zones, whose transition to the new methods had to be brought about from year to year. The first zone was opened to free trade on July 1, 1910. This zone alone comprises three-fifths of the territory. Its area is three times that of the United Kingdom. It spreads over the whole southern half of the colony, and almost com-



RUBBER CARAVAN.

lands have been negotiated with them. Catholic or Protestant, they all work with zeal to educate the native children; they are mighty assistants to the State in their unsparing efforts to fight the plague of sleeping sickness.

All are requested to send delegates to the Leopoldville's bacteriological laboratory. Traveling and all other expenses are paid by the government to missionaries who devote their



NATIVE DUG-OUT CONTAINING A RUBBER CARAVAN.

passes the whole. The reforms have thus been applied to all the districts in contact with neighboring colonies, as soon as they were enacted.

The second zone was opened July 1, 1911. It comprises the whole centre of the colony—its richest districts in rubber—the domain of the old Crown Estate.

Finally, the third zone, which comprises the north of the terri-

tory with a part of the centre will see the reforms completely applied July 1, 1912.

The government, moreover, is anxious to have the task accomplished and whenever it can be done without grave inconvenience, she anticipates the set dates. Sales of land are now being conducted in the three zones, and have been for several months

bend. The first one is shrinking and rapidly diminishing. It indicates the territories set aside for the Great Lakes Railway Company, ten million acres for every five million dollars spent.

Two lines already laid have cost 50 million francs (10 million dollars), and caused a grant of 20 million acres of forests worked by the government on half shares with the company.



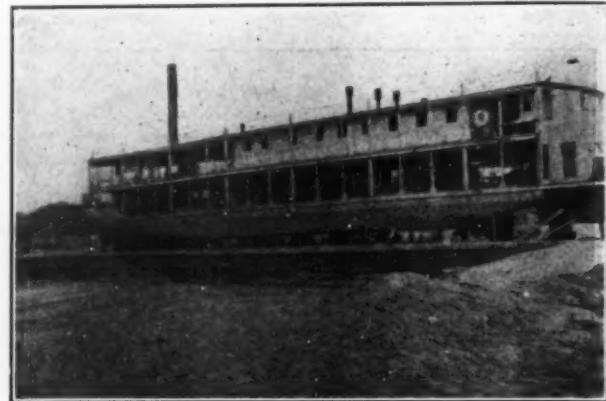
RAILROAD TRAIN AT LEOPOLDIVILLE.

past on the basis established by the new government. Companies and private individuals are settling. The tax in foodstuffs is also, from now on, abolished in the three zones.

But the zones do not comprise the entire area. Large spaces remain, the forest reservations where all harvesting is prohibited for the time being for the sake of preserving the native plants.

These were the grants of territory to land-owning companies under the old government. The Belgian State could not abolish these concessions, but has not given up the idea of bringing about their relinquishment. Negotiations are being carried on with the title holders of monopolies or property, the government being anxious to secure uniformity throughout the whole system. The results—obtained sometimes at great sacrifice—are considerable.

One of those thus re-purchased involves the immense territories of the Southwest, where the Kassai Company had an actual monopoly; in whose profits the State had a half share. This



A LARGE RIVER STEAMER ON MARINE RAILWAY AT LEOPOLDIVILLE.

The undertaking of a new line towards Lake Tanganyika will cost another five million dollars, but the concession of land will not be extensive this time. The company agrees to limit itself to the forests already granted, only increasing the proportion of its shares in the profits of their working. The immense areas left for future concessions are thus immediately thrown open again to the initiative of free trade. The other two important spaces are also disappearing.

These represent the concessions granted to two old companies of land-owners: The Abir (Anglo-Belgian Indian Rubber Co.) and the Société Anversoise du Commerce au Congo (Antwerp-Congo Trading Co.). By agreement, dated May 23, 1911, these two companies abandon their monopoly, relinquish their right of ownership, and keep only their stations and plots of land for plantations, agreeing to bring them into working order. Belgium gives up her share in the profits. Eighteen months after the



NATIVE HOUSES.

monopoly is abolished. Belgium has given up her share in partial compensation and her shares in the profits have been done away with. The old territories which the Kassai Company used to work, but where competitors are settling now, are merged in the first zone.

But three great vacant spaces still remain: to the east of Lualaba, to the north and to the south of the great Congo river



HOTEL ON THE MATADI-LEOPOLDIVILLE RAILROAD.

approval of the agreement by the Assemblies, the territories, worked by the companies, will be opened to free harvesting.

The extension of the reforms to the whole territory is thus a certainty. It now nears completion, and will be accomplished in a year's time. We may from now on declare nine-tenths of the enormous territories of Central Africa open to free harvesting, open to free trade, and open to free labor.

The India-Rubber Trade in Great Britain.

(By Our Regular Correspondent.)

THE prevailing topic in England has been the extraordinary fine and sultry summer which in July, the third hot month in succession, beat many existing records, nothing approaching the amount of sunshine having been experienced for 24 years. I have no exact figures as to the effect upon the waterproof garment trade, but it must have been very pronounced, and the set off in the increased demand for garden hose has been seriously affected by householders having notice in many districts to discontinue the use of hose owing to the threatened failure of the water supply. Although trade generally has been good during the summer there has been no exceptional activity in the rubber trade, some firms indeed reporting business as decidedly quiet. Hardly anything has been done in new rubber planting promotions, no doubt the low figure at which the quotations for many of the boom time companies stand making it difficult to interest underwriters. The financial papers have been full of reports of inharmonious meetings, at which disappointed shareholders have taken directors to task, and this has occurred not only in wild-cat companies, but also in the case of concerns floated under the best auspices and supported by the reports of scientific authorities. I don't propose to mention by name any particular company but I think that what has occurred with various companies in different parts of the tropics bears ample testimony to the value of the disinterested criticism which was to be found in the editorial columns of THE INDIA RUBBER WORLD during the boom period of last year. Although there has been a good deal of talk in the case of various companies of taking proceedings against promoters or directors, I don't know that any threat has matured except in one case where an investor got judgment for his investment of about £500 against a company who were prominently concerned in the flotation.

THE Reinforced Rubber Company, Limited, which was briefly noticed in these columns at the time of its flotation last year,

REINFORCED RUBBER. is now steadily at work. The factory is situated near Hull, the London offices and salesrooms being at 42 Norfolk

street, W. C. The main feature of the patent is the use of strong cotton thread introduced lengthwise into the body of the rubber, whereby, it is claimed, that the latter is greatly strengthened, a claim which is fully borne out by dynamometer tests. The reinforced rubber is by no means similar in its wearing capacity to ordinary canvas insertion. In the prospectus the utility of the invention was referred to chiefly in connection with boot soles, satisfactory reports having been made by the London Shoe Company, Limited, but more recently satisfactory experiments have been made with a variety of rubber goods, including solid and pneumatic tires, inner tubes for motor and cycle tires, rubber flooring, railway buffers, etc., etc. Mr. Major, who is well known as a tar distiller at Hull and Wolverhampton, is the moving spirit, though there is also a works manager of experience in the rubber trade and also a rubber chemist whose whole time is given to the business.

SINCE colorless rubber goods, made from enzyme free rubber by Bambees process, were put on the market three

TRANSPARENT RUBBER. years ago by the Leyland and Birmingham rubber companies I don't seem to

have heard much about them. This, of course, is nothing to their discredit, and the fact that feeding bottle outfits are commonly made of this class of rubber today shows that its advantages are recognized in some directions at all events. The other day, when being shown through the

laboratory of a large metallurgical works, I noticed that a considerable amount of rubber tubing of one-half inch diameter of this quality was in use. Enquiries that I made from the chemists elicited the opinion that it was not so satisfactory as the ordinary black tubing made from cut-sheet and this mainly from its greater tendency to oxidation and less resistance to chlorine and other destructive gases met with in the laboratory air.

THE Eighth Triennial Congress of Applied Chemistry meets in Washington and New York in September, 1912, the cordial invitation given by Mr. Whitelaw Reid on behalf of his government on the occasion of

INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY. the last meeting in London in 1909 having been unanimously accepted. At the London meeting the few papers dealing with rubber were taken in a section devoted mainly to a different subject and the lack of suitable arrangements made the Congress, as far as rubber was concerned, quite a fiasco. The complaints made with reference to this have borne good fruit, and at the New York Congress there will be a special sub-section of organic chemistry devoted to India Rubber and Other Plastics. L. H. Bockeland is president; C. C. Goodrich, vice-president, and Jaspar E. Crane, secretary, Harold van der Linde and David Spence making up the list of officials. The existence of this sub-section means that papers on rubber will be read before men who know something about the subject, and if the sub-section can get papers and attendance, such as was the case at the recent rubber exhibition in London, it will more than justify its formation. I may add that the Society of Chemical Industry, at its annual meeting this summer in Sheffield, was invited by a prominent member of the New York section to hold its next annual meeting at New York, and it was agreed to do so at about the same time as the above Congress. The Society of Chemical Industry has a good many rubber manufacturers and chemists among its members and some, at any rate, of these are sure to attend the meeting and the Congress.

THE practical test carried out by a committee of experts at the late rubber exhibition for the production of synthetic rubber

SYNTHETIC RUBBER. by the Heineman process has certainly attracted considerable attention and has led to some searchings of heart among

those controlling raw rubber interests. The report of the committee of experts is not yet available and all that is known with certainty is that rubber of a sort was made in a fairly large quantity from isoprene. That this was possible has long been known, but hitherto it has been thought that the cost of production would be prohibitive. Mr. Heinemann's backers, however, are credited with saying that they are certain of being able to produce the synthetic rubber at about 6d. per pound. The raw material to be used is crude Baltic turpentine, and it is through the sale of the by-products of the process at a good profit that the production of the rubber is brought down to a reasonable figure. Of course, the price of turpentine, owing to the destruction of the trees in America, has been on the up grade for years and undoubtedly there will be a good market for the Heinemann by-products if, as I presume, they can replace ordinary turpentine in the varnish trade. I don't suppose that the Heinemann people have any monopoly of crude Baltic turpentine and presumably this raw material will be drawn upon by the other patentees for the production of synthetic rubber from isoprene. Last year the synthesis of isoprene was effected by Professors Perkin and Weizmann at Manchester University and patented by them. Recently, however, they have joined forces with Messrs. Mathews & Strange, of London, as a limited company which

(according to the promoters) may or may not prove highly remunerative to the investor. Then there is the patented process of the Bayer Company, of Elberfeld, Germany, in which isoprene is also used. This company was reported a year ago to be about to erect a factory at Kiel, but I do not know whether the project has matured. With regard to the Heinemann process it is stated that a factory to treat 80,000 tons per annum of Baltic turpentine for the production of 7,500 tons of rubber is shortly to be erected in England, as it will be seen that events are moving rapidly forward. I see that Mr. Bethune, when addressing the annual meeting of the Rubber Growers' Association, said it would be advisable to test synthetic rubber for several years before adopting it for manufacture "for the tendency with many synthetic articles was for them to dissolve after a time into the constituent atoms." With the desirability for prolonged tests of the synthetic I quite agree, but I don't quite understand why synthetic organic compounds should be liable to dissolve into their constituent atoms. Synthetic bodies may, of course, undergo decomposition through oxidation or other causes, but I doubt if the elementary atoms of carbon and hydrogen have ever been produced from the various synthetic organic compounds now firmly established on the market—that is outside the chemical laboratory.

MR. REIMERS, THEN AND NOW.

THE many friends of Mr. Herman Reimers, that is, on this side of the Atlantic, will remember him as a stout, athletic, exceedingly jolly individual with keen blue eyes, tightly curling blonde hair, and a general appearance of tremendous vitality. He was a large man and so much resembled Sandow that he was often taken for him. But he has changed. It is only necessary to glance at the accompanying illustration drawn especially for "The India Rubber Journal," London, to appreciate what Europe has done to and for our friend. Few who knew him would recognize in the dapper, clerky (pronounced clarkley) figure, the once robust Reimers. London fog? Mincing Lane? Home-sickness? Is it any or all of these that have thus wrought upon one whose physique was the pride of the American rubber trade?

WASTE LEATHER: WHY NOT RUBBER WASTE?

English advices speak of a road made of leather waste treated with tar as being resilient and silent, while showing no signs of wear after a year's service. This mode of dealing with a waste product (for which no real use has existed) is considered a distinct advantage of the leather industry. No claims are, however, made for leather waste, which are not equally applicable to rubber waste. If rubber ever reaches 50 cents a pound to remain there, roads of rubber waste would be a probability.



MR. HERMAN REIMERS.

TEN YEARS IN THE AUTOMOBILE TRADE.

A preliminary statement, showing the rapid growth of the automobile industry during the past decade, has recently been issued by the Director of the Census. It shows a most remarkable development of the business, the number of establishments having increased from 57 in 1899, producing 3,723 machines, valued at \$4,548,100, to 316 in 1909, with an output of 127,289 machines, and a total value of all products of \$194,722,600, an increase of 4,001 per cent. Of this, \$165,115,100 was the value of the machines manufactured, and \$29,607,500, of automobile parts and repairs. The increase in the number of establishments represents 454 per cent.; in the number of automobiles turned out it amounted to 3.319 per cent.

The banner automobile manufacturing state is Michigan, where about 45 per cent. of the total output originated. It is a fact worth noting that the states in which carriage building flourished as an industry, lead in the building of automobiles. The passenger car exceeds its commercial rival numerically, 122,505 of all the cars listed being classified as "pleasure and family vehicles."

SPECIAL GOVERNMENT CHEMICAL INVESTIGATION.

With a view to remedying the disproportion between American imports in 1910 of chemicals and drugs, of about \$90,000,000 a year and exports of about \$20,000,000, the Bureau of Manufactures of the Department of Commerce and Labor is about to undertake a special investigation of the question. This step has been decided upon in view of the growing American desire to secure information concerning the remarkable expansion of the European chemical industry. Imports have, it is added, increased from \$67,000,000 in 1908 to \$90,000,000 in 1910, while exports have remained almost stationary in the neighborhood of \$20,000,000.

MICA INSTEAD OF TALC.

Inner tubes in automobile tires would stick and heat much worse than they do were it not for the thorough dusting with soapstone, talc, or sometimes graphite that they receive. The former substances, however, are not ideal, as they absorb water, and cake, while the last named is very apt to soil the hands and the clothing. An ideal substance is powdered mica. It is a perfect insulator and really prevents heating to a degree. It does not absorb moisture, and always stays in powder form. [United States Mica Company, Chicago, Illinois.]

MEXICO'S RUBBER SHIPMENTS during five months ended November, 1910, aggregated in value \$4,970,000 gold, against \$2,148,000 during the same period in 1909, and \$1,480,000 for the same period in 1908. These figures do not include guayule rubber, which totalled \$2,500,000 in the five months of last year, compared with \$1,700,000 and \$564,000, respectively, for the same periods in 1909 and 1908.

Some Rubber Interests in Europe.

GERMANY.

ASBEST UND GUMMIWERKE ALFRED CALMON, A. G., Hamburg. The extraordinary general meeting held July 31 was called upon to decide as to a reduction of the fundamental capital from 6,000,000 marks (\$1,428,000) to 4,000,000 (\$952,000) by withdrawing one share out of every three. At the same time, action was to be taken in regard to the issue of 2,000,000 marks (\$476,000) preferred stock. The number of shares represented at the meeting was 2,783,000. Chairman Oscar Ruperti recommended the adoption of the above propositions, which, he stated, had received careful consideration and which alone promised the rehabilitation of the business. Consul Heymann, in an address opposed the business management, the administration and the proposed recuperative measures, denounced the meeting, at which no information in response to inquiries could be obtained, as a "farce," and demanded the immediate release of General Director Calmon, with reservation of the right to institute claims for damages against him. He closed with an appeal to the stockholders to reject the propositions and vote for liquidation. After an address by Director Calmon, who outlined the promising condition of the business and speeches pro and con by other stockholders, a ballot was taken which resulted in the adoption of the propositions by a vote of 2,300, against 20 dissenting.

Deutsche Gummi und Wringerwerke, G. m. b. H. Berlin, will henceforth be known as Deutsche Gummi und Wringer Fabrik, and the place of business has been removed to Charlottenburg.

Aretz & Cie, Karlsruhe, Baden. The partnership is dissolved. William Schma has left the firm and Arthur Fackler is now sole proprietor.

The decease is announced of Georg Hoffman, of the rubber goods house, conducted under that title. His widow, Frederike Charlotte Hoffman will continue the business, with Miss Emma Auguste Hoffman as attorney.

The Westdeutsche Gummi Compagnie, m. b. H. Duesseldorf, has obtained commercial registry. The company will deal at wholesale in products of the rubber industry, especially rubber heels. The capital is 30,000 marks (\$7,140); the managers are Willy Hellinghausen and Heinrich Chorman, merchants, Duesseldorf.

The Mitteldeutsche Gummiwaren Fabrik, Louis Peter, Akt. Ges., at a general meeting recently held, elected Privy Commercial Councillor Lukas, Berlin, and Director Burg of the Maschinenfabrik, Augsburg-Nuremberg, directors, to fill vacancies in the board. The condition of the business was reported as not unfavorable, the volume exceeding that of last year by 19 per cent. The directors are of the opinion that no deficit is to be expected for the current business year.

The decease is reported of Wilhelm von Recklinghausen, director and president of the Kölnischen Gummifäden fabrik, formerly Ferd. Kohlstadt & Co., Cologne-Deutz, in the fortieth year of his age.

At a recent meeting of shareholders of the Gummiwerke Elbe, A. G., Berlin, it was resolved to increase the capital stock by the issue of 750,000 marks (\$178,000) in 6 per cent. preference shares.

Gummiwaren Manufatur Kron und Baer, Bremen, has been acquired by Albert Doeding, who will continue the business under the former title.

AUSTRIA-HUNGARY.

Ungarische Gummiwaren-fabriks A. G., Buda-Pesth, Hungary. In consequence of the decease of State-councillor Gustav v. Emmich, Hugo Marcus has been elected president. Former general-director Bela Rechtnitz has been elected to succeed him as vice-president.

FRANCE.

Société Commerciale de Caoutchouc. Anonymous French company with headquarters at Paris. Period of charter, 50 years, capital 2,000,000 francs (\$380,000) in 20,000 shares, each of 100 francs. The company will manufacture and deal in rubber and rubber products.

DENMARK.

The Continental Dunlop Pneumatic Tire Company's Danske Filial ved Wm. Gunn. The agency of C. R. Fischer has expired; A. H. Hall has been appointed agent.

The firm's general agenturet ved Bergstroem and Gothersgades Gummivarelager ved Bergstroem, since the decease of C. F. G. Bergstroem, have been acquired by H. Joergensen, who will continue them under the name of ved Henrik Joergensen.

The Aalberg syndicate that planned the establishment of a rubbe footwear factory in Jutland, under the title of "Den Nordjydske Galoche fabriks," is reported to have entered into a joint arrangement with the North British Rubber Co., Ltd., in Edinburg, Scotland, for co-operative working and the prospects are considered good for the establishment at Aalborg of a factory employing 150 work-people and with a preliminary annual capacity of about half a million pairs of rubber shoes.

GREAT BRITAIN.

It has been noticeable of late that British makers of golf goods of various kinds have been increasing the sales of their products in the United States, as a result of bringing their special lines more prominently to the notice of the trade and of the golfing public. In spite of the obstacles which the tariffs present, the results of efforts made to extend business are reported to have been fairly encouraging. In the export markets generally British golf balls are making great strides. The increased output of so many of the larger firms has had its usual effect in enabling the manufacturers to produce on economical lines, while keeping the quality of their output up to a uniform standard of excellence. Such firms, for example, as Martins-Birmingham, Ltd., have the facilities necessary for producing high-grade balls on a very extensive scale. The chief productions of this firm are the "Zodiac" and "Hurricane," in the more expensive qualities, and the cheaper lines the "Pluto," "Nipper" and others.—*Sporting Goods Dealer*.

The St. Mungo Manufacturing Company (Glasgow, Scotland), golf ball makers, have acquired the business of the American Golf Ball Company, which was the successor of the Kempshall Manufacturing Company, with a plant at Arlington, New Jersey. The St. Mungo Manufacturing Company, in addition to their water core ball, make regulation balls known as the "colonel," the "little colonel," "white colonel," and the "heavy colonel." The latter is a new type heavy ball for hard hitters.

CALLENDER'S CABLE COMPANY GETTING ITS SHARE.

A gratifying feature of the statement of the Managing Director, Mr. T. O. Callender, at the annual meeting of Callender's Cable & Construction Company, was his allusion to the distinct improvement in business since Easter. This was, he added, partially due to the improved position of the electrical supply companies. In almost every part of the world they were getting a fair share of the business.

He likewise referred to the financial aid by which British bankers were helping the Germans to carry out work in South Africa.

THE accepted authority on South American rubber—"The Rubber County of the Amazon," by Henry C. Pearson.

Japanese Rubber Statistics.

FOLLOWING up the general statistics of Japanese imports for the calendar years 1908, 1909 and 1910, which appeared in the June issue (page 306), the subjoined table, based on statistics received from a correspondent, shows the details and sources of imports at Yokohama during the month of May, 1911. The importations at that point being chiefly for the consumption of Tokio and other districts of central Japan, this return, while dealing with only one month, is typical in character; particularly as it represents almost the last receipts under the old Japanese tariff, which expired on July 17. Extracts from both the old and new tariffs appeared in the August issue of THE INDIA RUBBER WORLD (page 454), and the incidence of the new tariff will be reported in due time.

Taking the aggregate imports thus shown, in comparison with those from the United States, it will be found that apart from insulating wire, this country shared to the extent of about 35 per cent. in the Yokohama imports of manufactures of rubber for May, 1911.

YOKOHAMA IMPORTS OF INDIA RUBBER AND MANUFACTURES, MONTH OF MAY, 1911.
(CONVERTED INTO AMERICAN EQUIVALENTS.)

	From.	Quantity, Pounds.	Value.	Total Pounds.	Value.	Duty, (Old Tariff)	
CRUDE RUBBER	British India	7,240	\$4,125				
	Malay States	18,346	9,716				
	Dutch India	6,893	4,513				
	Great Britain	6,590	8,868				
	United States	15,424	18,292	54,493	\$45,514	Free	
RECLAIMED AND WASTE RUBBER	Malay States	53	4				
	French India	2,219	235				
	Other countries	4,758	428	7,030	667	Free	
PLATE RUBBER	Soft and Thick	593	532	593	532	10%	
	Hard	Germany	3,679	2,293			
		United States	3,220	2,598	6,899	4,891	10%
TUBE AND ROD RUBBER (Hard)					1,389	10%	
ALL OTHER RUBBERS	Great Britain	7,576	2,672				
	France	317	175				
	Germany	12,997	2,397				
	United States	55,055	9,917	75,945	15,161	10%	
INDIA RUBBER AND GUTTA PERCHA MANUFACTURES—UNSPECIFIED	Great Britain	698					
	France	589					
	Germany	1,718					
	Austria	35					
	United States	2,350			5,390	10%	
ENGINE PACKINGS	Great Britain	7,145	1,238				
	Germany	1,583	146				
	United States	3,977	2,160	12,705	3,544	10%	
HOSE AND MACHINE BELTINGS	Great Britain	6,399	1,658				
	United States	4,223	1,651	10,622	3,309	12%	
BICYCLE TIRES	Great Britain	15,506	18,251				
	France	253	215				
	United States	1,033	2,383	16,792	20,849	30%	
CARRIAGE, MOTOR CAR and all other parts	Great Britain	1,227					
	France	58					
	Belgium	26					
	United States	1,105			2,416	50%	
RUBBER BOOTS							
RUBBER OVERSHOES	United States	(pairs) 1,422		750	(pairs) 1,422	750	40%
WATERPROOF CLOTH	Great Britain	(sq. yds.) 374		223	(sq. yds.) 374	223	30%
ELASTIC BRAID AND CORD	Great Britain	546					
	Germany	305				851	30%
AIR PILLOWS	Germany	(number) 588		366	(number) 588	366	40%
RUBBER CLOTH FOR SHOES							
Silk	Great Britain	(sq. yds.) 1,556	3,132				
Other	Germany	485	1,241				
	Austria	" 347	805	(sq. yds.) 2,388	5,178	20%	
INSULATED ELECTRIC WIRE							
Submarine and Underground Cables	Great Britain	33,248	10,519				
All other	France	50,389	3,669				
	Germany	1,601,082	107,867				
	Italy	2,798	906				
	United States	127,499	25,661	1,815,016	148,622	5%	

TRADE NOTES FROM JAPAN.

(Special Correspondence.)

A NEW factory is under construction for the Nippon Rubber Company, Tokyo, to replace the structure destroyed in the big fire of April last.

The factory of the Kyushu Insulated Wire Works, recently established with a capital equalling \$500,000, is to be situated at Moji.

With a view to enlarging their factory for the manufacture of paper insulated cable, The Yokohama Insulated Wire Works recently acquired a piece of land about one acre in extent, on which to install an extension. The place of their former chief expert, Mr. Hata, who recently left the works, has been filled by Mr. D. Coyle, who lately came out from England at the request of this company. Developments of its operations are looked for in the future.

Some new machinery from Europe is being installed by the Fujikura Cable Works, who contemplate extending their production. A branch is now engaged in manufacturing waterproof cloth, which is meeting with some favor in the market.

The Teikoku Belting Company, which has lately been floated in Tokyo, with a capital equalling \$250,000, has taken over the former Ota-shiki Belting Company.

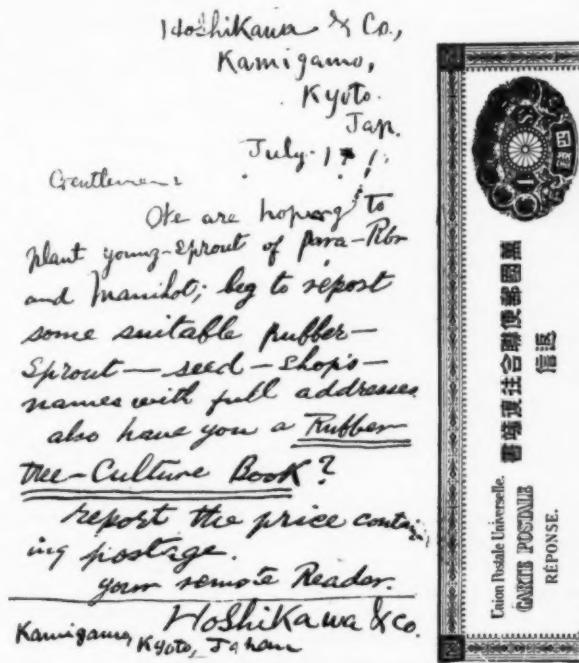
JAPANESE VIEWS ON RUBBER CULTURE.

THE "Gomu Shimpo," addressing Japanese rubber manufacturers, says:

"The survey of the Southern Ocean and South America is most important for rubber corporations contemplating the establishment of rubber plantations. It would certainly be very advantageous to study the nature of the soil, and the climatic conditions of the Malay peninsula. But as in that country a great deal of planting is being done, and there are numerous rubber plantations, more capital will probably be required for the establishment of new plantations than in Borneo. In an uncivilized country there is certainly more exposure to danger, but on the other hand, there are also great advantages. In addition to many other valuable products, there are wild rubber plants. The leasing of land for the establishment of rubber plantations is easy and the rental is low. (In some sections admittedly the rental of land is difficult.) But the means of communication between Borneo and Japan are decidedly less convenient than with the Malayan Islands. It is, therefore, of primary importance that improved means of communication be provided, if large plantations are to be established there, so that direct importation into Japan will become possible. These undertakings have been made an object by several capitalists who propose to establish in common large plantations, as an associated planting company, exactly in the manner proposed by Mr. Schichijuro Yoji. It is to be hoped that many people will seriously consider this enterprise.

"On the Pacific insular groups there dwell about one milliard, 50 to 60 million natives and 50,000 Chinese, in addition, there are at present 5,000 Japanese, the latter, mostly immigrants from Kyushu. The trade is mainly in the hands of German or Chinese merchants. There are among them only isolated Japanese, such as Shibusawa & Co., who have made more than 10,000 yen (\$5,000). The Japanese are mostly engaged in trading in drugs and raw materials. As the Chinese are possessed of great endurance and patience, and on the other hand, German goods are very cheap, the Japanese find no opportunity to enter into competition. After the war between Japan and Russia, the Japanese rose in estimation, and the land princes showed them some favor. But this was but of short duration. When Japanese laborers have saved 50 to 100 yen (\$25 to \$50) they

make their way to Singapore. Life there is expensive, especially for people not fully acquainted with the language of the country, and the money is speedily exhausted. The Chinese, like the natives, work for a daily wage of 50 to 60 sen (25 to 30 cents). For this low wage, however, the Japanese will not work. Consequently, many Japanese wander off to the pearl fisheries in the East Indies. They work there half the year at sea and half the year on land. But the cost of living is so high that hardly one in a hundred can save a larger sum. After the sixth month, the sea is very stormy and the work dangerous, so that many of the people come to grief. The most promising prospect is, with a little capital to start a rubber plantation. The large offers of rubber in the spring of last year was only an exception. When rubber plantations have previously been laid out, the capital invested had to remain six to seven years without profit. And in proportion as the rubber trees become more productive, the price of rubber, it is easy to see, will decline. For this reason the Mitsui Co. gave up, last year, its rubber plantations in the Pacific.



A FUTURE JAPANESE PLANTER.

CAREER OF A JAPANESE RUBBER JOURNALIST.

IN view of the constantly growing relations of this country with Japan, the progress of Japanese trade journalism is being watched with interest.

Among its prominent representatives is M. S. Yamada, of the Japanese rubber journal, the "Gomu Shimpo." He was born in 1882, and in 1904, after having passed through the middle schools of Shinstu and Ikubunkan, entered Waseda University, where he took up the English literature course and from which institution he graduated in 1908.

After having been editor of several business magazines, he became editor in January, 1910, of the "Gomu Shimpo," of which journal he became editor-in-chief in January, 1911. In view of his command of both English and Japanese, Mr. Yamada will be in a position to promote the development of American commerce with Japan, notably in connection with the rubber trade, to which his special attention is being devoted.

The Editor's Book Table.

RUBBER COMPANIES IN THE NETHERLAND EAST INDIES. Compiled by A. G. N. Swart, LL.D., President of the Netherland Commission, and issued by the Commission for the International Rubber Exhibition, London, 1911. [Cloth, 8vo, 307 pages, with colored maps. Amsterdam: J. H. De Bussy.]

A MANUAL of particulars, brought up to date, of the various companies working rubber estates in the Netherland East Indian Colonies, and including not only companies that plans rubber exclusively, but those who make it their main object.

Preceded by exhaustive papers on the "Suitability of the Netherland East Indies Rubber Cultivation," by Prof. Dr. P. Van Romburgh, of Utrecht University, and on "The Climate of the Islands in the Netherlands Indian Archipelago," by Dr. J. P. Van der Stok, director of the Royal Netherland Meteorological Institute, this work presents a complete list, in alphabetical sequence, of all the companies in the Netherland East Indies, interested, either exclusively or largely in the cultivation of rubber. The points of information covered in the case of each company are capital and plan of issue, purchase price of property, directors, secretary and office address; name and area of estates, their location, altitude, tenure, proportion under cultivation and to rubber; nature of catch crops, production and general information as to financial management, etc. The data has been obtained at first hands, and those for whom particulars did not arrive in time, are collected in an appendix.

An interesting addendum to the book consists of a classification of the total of the capital of all the rubber companies in the Netherlands East Indies, according to the country from which the greater portion of the capital for each company has been furnished. Under the caption, "American capital," appears but one entry, the Karimon Rubber Maatschappy, for which an investment of 1,000,000 fl. (\$402,000) is recorded.

GUAYULE—A RUBBER-PLANT OF THE CHIHUAHUAN DESERT. By Francis Ernest Lloyd, professor of plant physiology, Alabama Polytechnic Institute. Published by the Carnegie Institution of Washington, Washington, D. C.

In an exceedingly scholarly and complete monograph of more than 200 pages, illustrated by nearly 50 full-page plates, Professor Lloyd tells the whole story of guayule from its beginnings up to the present time. The preface speaks of Professor Lloyd's employment by the Continental-Mexican Rubber Co. and the Inter-Continental Rubber Co. to investigate the cultivation of guayule. This engagement lasted about a year when it was terminated. Later, while representing the United States Rubber Co. in guayule investigation, he had this additional opportunity to gather much information concerning this most interesting of the rubber-bearing shrubs.

The book is divided into nine chapters which, beginning with an historical account, treat the environment and all that that means in the way of geographical distribution, climate, etc., a complete botanical description of the plant, root systems, seeds, leaves, etc., reproduction, anatomy and histology, the resin canals, the origin and occurrence of the rubber, and of guayule cultivation.

The book is by far the most complete and important contribution to the literature of guayule that has yet appeared.

RUBBER TREE INSURANCE. BY FRED W. KNOCKER, F.Z.S., F.R.A.I. *The Financial News*, London. 8vo, 16 pp., paper.

THE author, who is not unknown in the field of rubber literature, has embodied in his pamphlet, several articles, on the insurance of plantation rubber trees against destruction by fire or tempest or injury by wild animals. This is a business lately taken up by Lloyds, and the author's purpose is to show that if the concern in question would send representatives out to the rubber growing sections and look personally into the business, there is every prospect of its increase.

AN AMERICAN CONSUL IN AMAZONIA. BY MAJOR J. ORTON KERBY. New York, William E. Rudge, 1911. [Cloth, 8vo, pp. 370. Price, \$2.50.]

Major Kerby is an old friend of the INDIA RUBBER WORLD, and for years sent valuable contributions from the land of Pará rubber. His book is written in an easy conversational manner, and deals with its various subjects with the utmost frankness. The author in his foreword explains that the beginning of the book, cabled to a press syndicate, was "prohibited by a cable dispatch from the then Secretary of State." On his return friends advised against its publication because of its criticism of the consular service and "certain humorous personalities." Now, however, with a consular service in the Brazil that we are proud of, with the humor expunged (?), with the "late Assistant Secretary of State" out of office, and under the friendly patronage of Andrew Carnegie, the book appears.

Printed in legible type, on good paper, with a profusion of illustrations that are appropriate and informing, as well as artistic, the work leaves nothing to be desired typographically, the binding, dark green cloth, embossed with tropical scenery in silver and black, completing the attractiveness of its appearance.

PARA RUBBER CULTURE IN SURINAM. BY A. W. DROST, assistant agronom to the Department of Agriculture, Surinam. Amsterdam: J. H. DeBussy, 1911.

WHAT Mr. Drost has written and had translated into English is very interesting. The volume is not large, but it is very informing and has some exceedingly striking full-page illustrations of *Hevea* rubber in various stages of plantation growth. There is also given a history of the planting of *Hevea Brasiliensis* in the colony and a list of the important plantations, the number of trees and their ages. There is a very clear description given of the climate, soil, of planting methods, tables of comparative growth under various conditions, and of tapping results from plantations which already have matured trees. Mr. Drost will, undoubtedly, some time in the future, expand the work into one that will cover the whole subject upon which he is so well posted.

OTHER BOOKS RECEIVED.

SUR LA DÉTERMINATION DU CAOUTCHOUC COMME TETRABROMURE (The Determination of Rubber as Tetra-bromide), by D. Spence and J. C. Galletly. In this brief treatise the authors call attention to the loss of bromine, which takes place in the decomposition of bromic derivatives of rubber by nitric acid, as recommended by Budde. They have been seeking to determine whether such decomposition can be effected without this loss, and claim that simple heating with a mixture of carbonate of soda and nitrate of potash gives satisfactory results.

Details of the tests made are quoted in six tables dealing with nineteen separate experiments. In some cases it was sought to determine whether carbonate of soda alone could effect the decomposition in the conditions desired, the result justifying that supposition.

In conclusion, it is stated that the best method of supplying this process of combustion to the determination of rubber will be considered later on.

THE STORY OF RUBBER. The author, Lindley Vinton, of Georgetown, British Guiana, has undertaken, in a thirty-page, 16mo, paper-covered pamphlet, to present a brief sketch of the history of the development of rubber cultivation in the East, and an examination of the present and future demand and source of supply for the benefit of those of the public who are interested in its production. The work is published by the Holliswood Press, Forest Hills, Long Island.

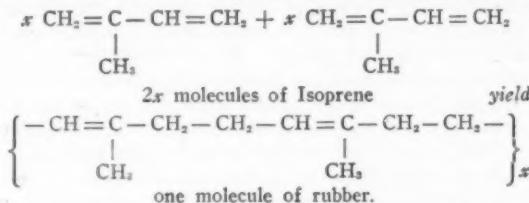
Actual Synthetic Rubber.

FOR the first time in the history of the rubber trade what appears to be real rubber produced by synthesis has been upon exhibition in England. Nor was it shown by charlatans or self-deceived inventors. The producers are reputable chemists and deceived inventors. The producers are reputable chemists and physicists, and there is no indication of stock promotion, sale of rights or attempt at trade revolution.

Dr. Silberrad, Ph.D., M. R. S. A., F. C. S., etc., thus takes the world into his confidence:—

The synthesis of substances originally obtained from natural sources is by no means new. Among a multitude of others now of considerable mercantile importance the following may be mentioned as examples: Indigo, vanillin, and oil of wintergreen. Thus synthetic rubber, although prepared "chemically," is not a substance adulterated with chemicals and not therefore inferior from that point of view. It has been suggested that synthetic rubber, while it might be of use for such purposes as insulation in electric work, would not be sufficiently strong for rough wear as in tires, etc. This is altogether a wrong suggestion. Synthetic rubber is rubber, and rubber only, and should be as well adapted for all work in which rubber is used as the natural product.

The basis from which we finally produce rubber is isoprene. This is converted into rubber by a process of polymerization, that is to say, two or more molecules become linked together, the component elements simultaneously assuming a different configuration. This reaction may thus be graphically represented:



Precisely what value x has or whether the first and last carbon atoms are linked together to form a ring is still a matter of uncertainty, and need not be further discussed here.

Synthetic rubber, then, is obtained from Isoprene by a process of polymerization. It will be found to possess the same physical features and constitution as natural rubber, and may be used for the same purposes and in the same way.

Although the process is patented in England and Germany, and patents are pending all over the world, we are unable at this stage to give the names of the materials used, as it is obvious that some reserve must be maintained in this relation. The raw materials have a commercial value, and there is not an unlimited supply; and although the quantity available is very considerable, the sudden demand for thousands of tons would cause the price to rise; so that the quantity of rubber it would eventually pay to manufacture would depend on the price of the natural product.

The cost of manufacture also depends so much on variable conditions that only a rough approximation can be arrived at at this stage. Also by-products have to be considered, and until the market values of these are established on a manufacturing scale, it is impossible to state an exact price at which the finished product can be produced. Taking all known data into account, however, we arrive at a cost of about 17 cents per lb. for Isoprene, so that 20 cents may be regarded as a very conservative estimate.

As regards the conversion of Isoprene into rubber, there is yet much work to be done, both as regards yield and purity. At present it is questionable whether the synthetic product could be manufactured to compete with the natural even at present prices. We have, however, made great strides of late, and are now able

to produce a hard rubber quite distinct from the soft and sticky material so lacking in strength, which is all that has heretofore been synthetically produced.

The process is absolutely unburdened in any way; no expenditure other than that directly necessary to the pursuance of the work and obtaining of the patents having been incurred; the results have proved so promising that it has been decided to form a small powerful syndicate to pursue a more energetic policy.

In conclusion, it should be clearly pointed out that no suggestion as to the possibility of synthetic rubber ousting the natural product from the market is entertained. Thus, although there is every prospect of this process becoming of the greatest commercial importance, we deprecate any suggestion that these statements be made the cause of apprehension on the part of planters or shareholders in rubber companies.

Dr. Heinemann, of the Caoutchouc Syndicate, when interviewed by an INDIA RUBBER WORLD correspondent gave out the following:

"Regarding the manufacture of isoprene rubber, the present method adopted to manufacture isoprene consists in the destructive distillation of turpentine by passing the turpentine over contact substances like copper or silver which allow a lower temperature, so as to prevent the polymerization of the already formed isoprene. The yield obtained varies according to the turpentine used. American gives, of course, a higher yield of isoprene than Russian. This depends on the quantity of pineine present. (See English patent 14040/1910. American patent not yet published.)

"Another method is the conversion of carbohydrates like starch, sawdust, etc., into isoprene by first making laevulinic acid and the latter being transformed into thioholene, which is again reduced to isoprene. A full description of this process is published in the English patent No. 13252, 1908, and the American patent No. 951,072. Either of the above mentioned methods is fully satisfactory, so that isoprene can now be called a commercial article.

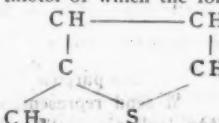
"The conversion of isoprene into rubber is, of course, quite well known, but our method is in so far new as I have succeeded in improving the process, that is, I get a better yield in rubber from isoprene in a short period of time.

"One of our processes consists in treating the isoprene with ozone, followed by heating the ozonized isoprene. (English patent No. 14041, 1910, American patent not yet printed.) A second way of polymerization is the treatment of the isoprene with certain organic substances to gain a material absolutely like the natural, genuine rubber. (Patent applied for.)

"Either method gives a yield of about 40 to 50 per cent. of rubber. The cost of material for producing one pound of isoprene is about 6 cents whilst the cost of the pound of rubber is 12 cents. This sum, of course, does not include expenses of manufacture, etc., which will be about 4 to 6 cents per pound."

The German chemists say of the process:

"The Caoutchouc Syndicate employs, ostensibly, as the basic material for the production of isoprene, carbohydrates (sawdust, starch, sugar) from which in a manner that could not be definitely ascertained, with laevulinic acid $\text{CH}_3\text{COCH}_2\text{CH}_2\text{COOH}$ and the thiol of which the formula is:



isoprene was produced. The firm exhibit large quantities of isoprene and samples of synthetic rubber. Ostensibly 4.409

pounds of starch should yield about 7.91 ounces of rubber at a cost of about 20 cents per pound. The company also obtains, by splitting up raw Russian oil of turpentine, isoprene to the extent of a yield of 15 per cent, the isoprene can then be transformed into rubber with a yield of 50 per cent. As a by-product there is obtained a highly valuable refined oil of turpentine."

BARROWS' REVIEW ON SYNTHETIC RUBBER.

In a paper which recently appeared in the *Armour Engineer*, the general question of synthetic rubber has been discussed in the form of an able review of the technical literature on the subject, by Mr. Frank E. Barrows, formerly of the Class of 1910 at the Armour Institute of Technology, and now an assistant examiner at the United States Patent Office, Washington, District of Columbia.

WHAT IS SYNTHETIC RUBBER?

Synthetic rubber had been defined by the *India Rubber Journal*, in 1907, as "a substance built up by chemical means . . . and possessing all the physical and chemical properties of the natural rubber." Mr. Barrows considers it necessary to modify this definition. While retaining in its exact form the reference to physical properties, he proposes enlarging the scope of the other reference, so as to include chemical properties, either identical with or analogous to those of natural rubber. These requirements would seem to be met by the four hydro-carbons intimately connected with the production of synthetic rubber—isoprene, diisopropenyl, erythrene and piperylene—between all of which there is a close relation, as shown by Mr. Barrows's detailed references. It would, however, seem that by reason of the closer attention which has been paid to it by chemists, isoprene has become the most familiar of these, and the problems of its production and utilization have, therefore, been most prominent in the technical literature on the subject.

ISOPRENE KNOWN FIFTY YEARS AGO.

It had long been known to chemists, through experiment, that isoprene (itself one of the products of the destructive distillation of rubber), could, under suitable conditions, be again converted into rubber by polymerization. As early as 1860, both these processes were described by Greville Williams (*Journal of the Chemical Society*, vol. xv., p. 110). In 1879, Bouchardet also described the polymerization of isoprene, the properties recorded seeming to identify this isoprene polymer with the parent material of the isoprene itself—rubber.

In view, apparently, of the high cost involved by the production of isoprene through the distillation of rubber, attention was given to other sources from which that agent could be obtained. Thus, Professor Tilden, in 1882 and 1884, recorded experiments in the depolymerization of turpentine and the decomposition of turpentine vapors by heat. In 1885 Wallach, a German chemist, found that after the exposure of isoprene to the light and upon the addition of alcohol, a rubber-like mass was developed, which hardened on exposure to the air. In 1892, apparently unaware of Wallach's observations, Tilden specifically reported the spontaneous polymerization of isoprene, which had been obtained from turpentine.

Harries, Pickles, and others have since described the polymerization of isoprene, claiming that the trials made identified the product as the same in composition and properties as natural rubber. Other extracts from the technical literature on the subject deal with further researches by Pickles, Lebedoff and Wechsler; as well as those of Henrichsen, affecting the ozone process.

SAME FORMULA FOR SYNTHETIC AND NATURAL RUBBER.

As Mr. Barrows remarks: "It is natural that the term, 'synthetic rubber,' should first suggest the product made from isoprene . . . It is known that the rubber from isoprene has the same percentage, composition, and hence empirical formula, as natural rubber ($C_{10}H_{16}$). It should follow that the rubbers from

erythrene, piperylene and diisopropenyl should also have the same empirical formula as the hydro-carbons from which derived."

PATENT LITERATURE ON SYNTHETIC RUBBER.

Turning from periodical to patent literature, Mr. Barrows quotes the principal features of the following patents referring to synthetic rubber:

(a) British patent to St. George, No. 15,544, of 1892; condensation of turpentine by means of hydro-chloric acid.

(b) Heinemann patents, British, No. 21,772, of 1907, and French, No. 394,795; condensation of isoprene to caoutchouc by concentrated hydro-chloric acid.

(c) French patent, No. 417,170, to Badische Amin and Soda Fabrik; the caoutchouc being separated by precipitation with alcohol, or by steam distillation of the unchanged isoprene.

(d) The polymerisation of diisopropenyl, described in British patent No. 14,281, of 1910, and French patent No. 417,768, of 1911, to the Badische Anilin and Soda Fabrik.

(e) The polymerisation of erythrene, according to the British patent No. 15,254, of 1909, to the Farben Fabriken, of Elberfeld, is also specially mentioned by Mr. Barrows, who remarks that erythrene is the mother substance of both isoprene and diisopropenyl (two of the four hydro-carbons named).

Such are the salient parts of Mr. Barrows' review of the synthetic rubber question, as reflected in the technical literature on the subject. This review is not offered as a final solution, but for the purpose of making clearer the various issues under discussion.

A PRACTICAL MANUFACTURER ON SYNTHETIC RUBBER.

In a recent issue of "Kunststoffe," Dr. Gerlach, of the Continental Caoutchouc and Gutta-Percha Company, Hannover, Germany, makes the following statement:

"The problem of producing caoutchouc synthetically has been solved. But just as in the case of indigo, twenty years lapsed before the synthetic product was successfully launched, it will take perhaps longer with caoutchouc because the physical properties of this material are not as well known as those of indigo. The high price of the natural product, stimulated research, and after the pioneering experiments of Harries, the Elberfeld Farbenfabriken have finally succeeded in producing larger quantities of a product derived from a material closely related to isoprene. At this stage of the development it was found out that there exist many sorts of rubber which are near relatives, but still possess different characteristics.

"The first synthetic caoutchouc which was placed at my disposal, for example, did not unite with sulphur and had a leathery appearance. This was not to be wondered at, as there are known some varieties of natural caoutchouc which cannot be vulcanized. Soon another sort of rubber came to my notice which showed better affinity for sulphur, but still could not be perfectly vulcanized. Above all, it lacked elasticity. Soon, however, larger quantities of a third sort were submitted to me which, to my great astonishment, showed all the excellent properties of natural rubber.

"But now the question arises whether this material of the Elberfelden can be economically produced on a large scale and may thus become a danger for natural rubber. It cannot be denied that the substance, which possesses good qualities, can be utilized for practical purposes. Its price is not high, but it is a complex question to decide whether this synthetical product will become a danger to natural rubber. All kinds of economical and commercial conditions must be taken into consideration. One thing, however, is certain, that synthetic rubber will soon be a commercial article."

THE accepted "authority" on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

RECENT ENGLISH SYNTHETIC RUBBER PATENTS.

14,281/1910	Badische Anilin & Soda Fabrik.....		Substances resembling rubber.
27,398/1909	E. Black, London..... } G. A. Morton, Liverpool }		Use of isoprene or "Mortonene" with hemiterpenes or certain carbohydrates.
4,001/1910	Oswald Silberrad, Silberrad Research Laboratories, Buckhurst Hill		Improvement in manufacture of isoprene from turpentine.
29,277/1909	George Lilley, Chemist to Synthetic Rubber Co., London		Manufacture of mesoprene.
29,666/1909	F. E. Matthews... } London		Synthetic manufacture of isoprene and rubber.
4,572/1910	F. E. Matthews... } London		Synthetic manufacture of isoprene and rubber from amylic alcohols.
4,620/1910	F. E. Matthews... } London		Manufacture of rubber and intermediate product from rosin.
25,087/1910	G. Reynaud, 5 Rue Salneuve, Paris.....		Treating turpentine with hydrochloric acid for industrial manufacture of rubber.
4,189/1910	F. E. Matthews... } London		Production of isoprene (and rubber therefrom) from petroleum.
17,734/1910	Farben Fabriken, Elberfeld.....		Result from heating isoprene.
15,254/1910	Farben Fabriken, Elberfeld.....		Treatment of erythrene, etc.
25,850/1910	Do	Do	Do Do
6,540/1911	Do	Do	Do Do
6,642/1911	Do	Do	Do Do
5,931/1910	W. H. Perkin..... } Manchester		Improvements in synthetic manufacture of rubber.
	Charles Weigmann } F. E. Matthews... } London		
5,932/1910	Do	.....	Synthetic manufacture of isoprene and rubber.
14,040/1910	Arthur Heinemann, London.....		Improvements in production of isoprene.
14,041/1910	Arthur Heinemann, London.....		Polymerization of isoprene.

RUBBER STAMPS IN POTTERY DECORATION.

WHILE the industrial use of rubber stamps was originally confined to purposes of a practical and utilitarian character, their application to ornament and decoration is of more recent date. The reproduction of designs, as to its detailed methods, is necessarily influenced by the character of the material which is to receive the impression. While rigidity is in many cases desirable in the stamp, in others the opposite qualities of

plied by hand to low-class ceramic articles displayed limited taste and skill. To render it possible to bring out in such ware the artistic effects now called for in staple ceramic products it was necessary to bring out in a suitable material a range of ornamental stamps, for the reproduction at nominal cost of designs at the same time of artistic and pleasing character.

"Such an object has been fully and successfully accomplished by the German firm of J. Bergeon, established in 1878, and making a specialty of decorative stamps, composed of pliable vulcan-



RUBBER STAMPS FOR DECORATING POTTERY.

pliancy and elasticity have been called for. Rubber, it has been conceded, displays in the highest degree the last-named characteristics.

In no branch of manufacture has the latter need been more useful than in the ceramic and glass industries. "The Pottery, Glass and Brass Salesman" says of ceramic rubber stamps:

"With the object of placing at the disposal of the masses the highest forms of modern decorative art, the ceramic industry had to find a material suitable for use in processes of rapid and economical reproduction. This requirement has been fully met by the employment of rubber, the pliability and durability of which rendered it specially adapted for the purpose in question.

"In the old days, from motives of economy, the decoration ap-

plied by hand to low-class ceramic articles displayed limited taste and skill. To render it possible to bring out in such ware the artistic effects now called for in staple ceramic products it was necessary to bring out in a suitable material a range of ornamental stamps, for the reproduction at nominal cost of designs at the same time of artistic and pleasing character.

Among the principal advantages claimed for these ornamental rubber stamps is clearness and sharpness of outline, even in designs of a complicated character nature. By the courtesy of the journal already referred to, a few specimens are reproduced, illustrating some of the results obtained by the skilled and intelligent use of rubber stamps for ceramic decoration. The designs run into thousands. They are infinitely diversified, embracing all sorts of ornate designs in scroll work, geometric figures, coats of arms, portraits, landscapes, etc. They vary in size from 1 inch square to a foot square.

Progress of Rubber Planting.

AMERICAN HEVEA GROWERS.

THE Waterhouse Brothers, of Honolulu, have long been well known as successful planters of *Ceara* rubber in the Hawaiian Islands. They are also large planters of *Hevea* in the Malay States. Two years ago THE INDIA RUBBER WORLD published a picture of a *Hevea* tree eighteen months old on the Pahang plantations, situated about 60 miles from Kuala Lumpur. For the sake of comparison, the picture of this tree is again published by the side of one of the same tree taken in January, 1911, showing it matured and marked ready for tapping. The two illustrations show a most satisfactory growth.

The Pahang Rubber Company, Limited, are tapping 10,000 trees.

be found for rubber, or the demand will not equal the supply. Whether or not this estimate is correct, it places the anticipated 1916 Asiatic production at about the figure of Mr. Rutherford, or at half that of Sir John Anderson, lately High Commissioner.

The aggregate exports of the Malay States had risen from the equivalent of \$6,500,000, in 1882, to \$69,765,820 in 1909.

The revenue of the three States composing the Federation, which, in 1875, equaled about \$405,000, had increased by 1909 to \$14,727,285. All the public works done in the country have been paid for out of revenue; there being no public debt. Its area is about 26,000 square miles (slightly larger than that of West Virginia).



TAPPING ON TANJONG OLOK
RUBBER PLANTATION.



PAHANG PLANTATION.
Hevea Tree 18 Months old. June, 1909.



PAHANG PLANTATION.
Same Hevea Tree. January, 1911.

and expect, during this year, to market about 18,000 pounds of rubber. This company owns some 2,000 acres of land, more than one-half of which is already planted.

The same group of Americans own the Tanjong Olak rubber plantation which has 1,450 acres on the Muar River in the State of Johore. This land is all planted to rubber. The group of Americans, all of whom are residents of Honolulu, who are successfully promoting these planting enterprises are: P. R. Isenberg, president; G. N. Wilcox, vice-president; Albert Waterhouse, secretary; Fred T. P. Waterhouse, treasurer; E. A. Knudsen, G. G. Fuller, C. R. Hemenway, directors.

PAST AND PRESENT OF THE MALAY STATES.

Dealing with the "Past and Present of the Malay States," a writer in the *Australasian* states that there are now in that country 500,400 acres under cultivation for rubber, of which 196,950 acres had been planted by the end of 1909. The capital of the 110 companies of that class listed by the London Stock Exchange, equaling about \$50,000,000, it is estimated that the aggregate capital of the 377 "Malay" companies cannot be far short of \$140,000,000.

Regarding production, the writer expresses the anticipation that within five years the yield from 250,000 acres will reach to 34,000 tons, or about half the amount of the world's present consumption. Thus, it is added, by 1916 many new uses must

WHAT RUBBER DID FOR PERAK.

According to the report of Mr. E. W. Birch, for years British resident in Perak (one of the three Federated Malay States), the cultivation of rubber has there made wonderful strides; the lucrative results attained by various Malay planters having encouraged the acquisition, by various nationalities, of land suitable for planting rubber. He urges the need of government legislation providing for the planting of cocoanut trees. Thus preventing large estates from being surrounded by patches of native-grown rubber.

"AN OBLIGING MAN."

According to the "Malay Mail," the directors of the Ayer Panas Rubber Estates, Limited, had, at the recent extraordinary meeting, held at Singapore, the unpleasant task of announcing the misappropriation by the late Secretary, Mr. A. A. Gunn, of monies equaling nearly \$30,000 gold. According to the Chairman's explanation, Mr. Gunn had been a "very obliging man" in helping sea-faring friends in the detailed formalities of securing allotments, and then paying their checks in his favor into his private account.

The main defalcations had been in misusing the proceeds of rubber and tapioca sales, the checks for which were, according to custom, made payable to him, and were deposited by him in his own bank.

By unanimous resolution, it was decided to issue shares to *bona-fide* applicants, who would otherwise have been sufferers. It is understood that 10 per cent. of the amount misappropriated has been refunded. There are expectations of getting back in all 30 to 40 per cent. For the purpose of covering the losses incurred and providing for various liabilities, the issue of debentures up to \$75,000 gold, was decided upon by a majority of 19 to 5.

THREE VIEWS OF THE RUBBER SITUATION.

In quoting a Brazilian report indicating the officially admitted necessity of Federal and State co-operation, for the relief of the rubber crisis, the "Panama Star" lately enunciated the view "that the big rubber manufacturing interests, particularly in America, have the whip hand, and may succeed in smashing the market to the extent that rubber will be available at somewhat near a fair price at all seasons of the year."

During a recent interview with a representative of the "Times of Ceylon," Mr. W. E. Byles, of W. E. Byles & Company, New York, expressed the opinion that American manufacturers have a good deal of rubber in stock, and were convinced they would get rubber a good deal cheaper by waiting. Regarding business generally, he considered America is in a strong position, and may expect a trade revival before very long, in which rubber should share.

The letter of Mr. A. S. Paxendah, a Singapore rubber estate valuer and expert, published in the London "Times," reports as follows:

"Having sought the views of rubber manufacturers and others in the trade, I have found the opinion is strongly held that the average price during the next five years will not be below 3s. 6d. (\$0.879 gold).

"It is, however, added that before any vast increase in demand takes place, manufacturers must be convinced that the price of rubber is not to be subject to quick and large fluctuations."

RUBBER IN BRITISH EAST AFRICA.

While the potential importance of British East Africa (as the "Daily Mail" of London remarks) lies in its unequalled range of altitude and climate, the tropical coast belt, though far from healthy, is remarkably fertile. No traveler on the railway can fail to be struck by the number of young rubber plantations springing up, while cocoanut and its by-products do extremely well, by reason of the coral subsoil. The coast belt, while it has excellent prospects, is, however, unsuited for colonization, in connection with which the real future of the protectorates is said to lie in the Highlands, with an altitude of 5,000 to 8,000 feet.

GERMAN WEST AFRICA RUBBER CULTIVATION.

Some interesting statements by Mr. A. Strauss, manager of an extensive rubber and cocoa estate in the Cameroons, who recently visited the East, have attracted attention. German enterprise is said to have done much for that part of Africa, since the colony came under white rule in 1884. Ten years since, planters began the cultivation of *Funtumia Elastica*, but some four years ago they took up *Hevea*. The 25,000 acres now planted with rubber are one-half in each of the above named descriptions.

About 72 tons of plantation rubber have, up to the present, been exported from German West Africa, but a much larger export is anticipated for 1912. At the same time the rubber output from that quarter would, Mr. Strauss considered, for some years, have no effect on the world's supply. In some of the German West African colonies good forest rubber is being obtained, but the production is going back every year. Labor, he added, constitutes the principal difficulty to be met.

"THE" BARBADOS, RUBBER AND BALATA.

An esteemed contemporary publishes the following under the heading "Rubber and Balata": "These two products showed a slight falling off last year in the Barbados, though the market price for rubber was high. This shortage of output may be due

to accidental causes, as the cultivation of rubber and balata is being encouraged both by systematic investigations by the agricultural societies and by government aid and outside capital. New companies have been formed, which indicates a large accession of capital to the cultivation. It is safe to predict that the next few years will show a much larger proportion of the exports of the colony from these two sources."—*Dept. Labor and Commerce.*

First, don't say the Barbados, unless you are willing to say the Cuba, the Jamaica, etc. Next, there are but three rubber trees in Barbados and they have to be coaxed to continue living. There never was any balata there. No cultivation of either rubber or balata is even remotely thought of. Soil and climate are not adapted, and—did that come from the Department of Commerce and Labor anyhow?

RUBBER PLANTING INVESTMENT IN VERA CRUZ.

William W. Canada, United States Consul at Vera Cruz, Mexico, says: "The amount of American capital now invested in this industry, and in this consular jurisdiction, is a matter of conjecture only. The money invested by shareholders in the United States in rubber plantation schemes cannot be less than ten million dollars in gold. The amount actually employed in planting rubber, however, is quite another matter. It is my opinion that five hundred thousand dollars gold would about represent the sum actually employed in tree planting and cultivation.

"One of the reasons for this discrepancy between stocks sold and money invested in planting rubber is that, when it became evident to a number of companies that tried to raise rubber that their enterprises had resulted in failures, some of the companies diverted their capital into other channels, as, for instance, the planting of sugar-cane, sugar-making, and the production of alcohol."

[We should doubt the \$10,000,000 investment in the State of Vera Cruz, and for a guess would hazard the actual expenditure of about \$2,000,000 in real rubber planting there. But we are guessing just as the consul is.—*The Editor.*]

SUMATRA EXCELLENT FOR HEVEA.

The ideal land for growing rubber is an undulating and largely self-drained alluvial deposit, of an elevation of from 100 to 300 ft. above sea level. Upon the East Coast of Sumatra is, perhaps, the most ideal spot in the world for *Hevea* rubber plantations. In the first place, you have from the Simpang Kiri River in the northeast, to Rokan Kiri River on the same coast, about 300 miles south, a splendid undulating territory, marvelously drained, and, at the same time, irrigated by dozens of small rivers. You have an almost continual rainfall spread over the year; you are sheltered from all the great winds on the western side by the spine of mountains, which run the whole way from north to south of the island; and from the east you are protected by the Malay Peninsula; and then you have a large and industrious local population, and, close, handy, a further population of over 30,000,000 people in Java, under the same government, which is always prone to assist a company, whether English or Dutch, in the development of its estate.—*The Malay Mail.*

RUBBER FROM SOUTHERN BRAZIL.

In the official report on the trade of the consular district of Rio de Janeiro for the year 1910 and part of the year 1911, the British Vice-Consul at Cuyaba (Mr. John L. H. Atkinson) says:

Rubber continues to be the most important article of export from this State. Concessionaires sent their men into the woods fully a month earlier than is the custom, but the increase in the quantity exported only shows a slight advance upon previous years. It is remarkable to note that during the "boom," when a great number of rubber companies were floated on the British market, not even an inquiry, as far as I can ascertain, was made by British capitalists for lands in this State. I am of the opinion that under skilful management and with well-organized

transport, the output of any concession at present worked by native firms could be doubled. The exportation from the north of the State finds an outlet on the Amazon, and does not pass through Cuyaba. I consider that quite 50 per cent. of the rubber consigned to Monte Video from this district eventually finds its way to British markets. The total rubber exported of all qualities was: Uruguay, 264,325 kilos; Germany, 67,283 kilos; United Kingdom, 193,219 kilos; Belgium, 5,651 kilos.

AMERICAN PLANTERS IN THE PHILIPPINES.

The Bureau of Insular Affairs at Washington has lately issued a most informing bulletin on cocoanut growing in the Philippines. It is from the pen of the Hon. Dean C. Worcester, who has had the advantage of fifteen years' study of planting there. It is not our purpose here to treat the essay, excellent though it is, but to point to the ever growing interest in plantations of various sorts in the islands. We agree most heartily with the *Manilla Daily Mail*, which says:

The Philippine Islands offer one of the best fields in the world for the investment of capital in rubber growing, both the soil and the climate being adapted to rubber cultivation.

Some rubber plantations have been established by the far-seeing and enterprising, but the Philippines are capable of supplying in the entire American market with rubber, and in the future may supply that demand, but the plantations now producing rubber are small compared to what might be accomplished in that line.

New syndicates are seeking investment in the islands, and a number of young plantations are coming along in a promising manner, but the cultivation of rubber in the Philippines is still in its infancy.

RUBBER GROWING IN PAPUA.

According to a statement of the British Cotton Growing Association, which is largely interested in the development of Papua, rubber is indigenous to that island. It is added, that in the opinion of experts, the Pará rubber tree attains maturity there earlier than in most tropical countries.

GUAYULERA STRIKE CALLED OFF.

The strike of seven hundred men on July 23 at the Guayulera Continental-Mexican rubber plant was of short duration. On July 30 it was decided that those who desired to return to work might do so without interference from the others. In consequence, a full force of men reported for duty on the morning of August 1.

TO RAISE PONTIANAK IN BORNEO.

The reported intention of the Netherlands-Indian Government to give a German combination a concession for the cultivation of six million acres of land in Borneo with Jelutong trees *Dyera costulata*, has aroused opposition in Holland. Mr. J. G. Schlimmer, a director of the Borneo Sumatra Handel Maatschappy, has issued a protest against the proposed concession. He states that the terms by which trees must be registered and other formalities observed, are of no consequence, as the Jelutong trees in Borneo and Sumatra are only growing in primeval forests, where a whole army of functionaries would be wanted to supervise the tapping. In his opinion, this concession will practically be a monopoly in favor of foreigners.

HOW MANY HEVEA SEEDS PER TREE.

A correspondent of the "Times of Ceylon" having stated that an average crop was 200 seeds per *Hevea* tree, another correspondent has disputed that assertion. From the experience of the latter writer, a few of his own trees, nearly thirty years old had yielded an annual crop of 4,000 to 10,000 seeds per tree. In commenting on this letter, the journal named remarks, that the yield of a few old trees must not be reckoned, but that of a considerable number, from six to eight years of age.

GOVERNMENT CO-OPERATION IN MALAY RUBBER CULTURE.

By the 1910 report of the Straits Settlements Forest Administration, it would seem that thinnings of useless species were in some instances made to give light to young gutta-percha trees with very beneficial results; the undergrowth interfering with gutta-percha and Pará trees being cleared. An increase was recorded of 45 per cent. in the yield of that rubber, as compared with 1909, from the Pará rubber trees in Ayer Kroh and Bukit Sebukor.

PLANTATION NOTES.

INTERNATIONAL RUBBER AND PRODUCE TRUST, LIMITED. At the second annual general meeting, held in London, July 28, a net revenue of £67,528 was reported, of which the directors recommended that £30,000 be placed to reserve and £37,583 carried forward to next year's account. The report and accounts were adopted.

KINTA KELLAS RUBBER ESTATES, Perak, Federated Malay States, reports for the year ending March, 31, 874½ acres planted and 151,105 trees on the estate, of which 30,420 have been brought into tapping. The year's yield was 30,085 pounds, which realized, after deducting all charges, £7,361, the approximate cost of tapping and curing being 1s. 2d. per pound. The general manager's crop estimate for the current year is 60,000 pounds. The directors propose an interim dividend of 5 per cent. on account of the current year.

JERAN (SELANGOR) RUBBER ESTATES report the entire area of 1,039 acres planted. For the year ending March 31, 1911, the crop of dry rubber amounted to 14,152 pounds, against an estimate of 12,000 pounds, the selling price being 5s. 3½d. per pound. The cost of the rubber, f.o.b. Port Swettenham, was 1s. 8½d. per pound; 22,431 trees were reported as under tapping on June 10, and the estimated crop of 35,000 pounds for the current year promised to be largely exceeded. From the amount standing to profit and loss (£2,556) the directors recommend the payment of a dividend at the rate of 5 per cent. per annum.

VALLAMBROSA RUBBER COMPANY reports 126,000 pounds of rubber harvested for four months ending July 31, 1911, compared with 132,000 pounds for the same period last year. Complaints are made of protracted drought.

SCOTTISH MALAY RUBBER COMPANY, LIMITED, reports 38,135 pounds of dry rubber harvested for seven months ending July 31, 1911, compared with 11,509 pounds for the corresponding period of 1910.

SAPUMALKANDE RUBBER COMPANY, LIMITED. For six months ended June 30, 37,778 pounds of rubber were harvested, of which, up to the beginning of August, 18,190 pounds had been sold at a gross average of 5s. 9d. per pound.

RIVERSIDE (SELANGOR) RUBBER COMPANY, LIMITED, harvested 23,557 pounds of dry rubber for seven months ending July 31.

THE LANGEN (JAVA) RUBBER ESTATES COMPANY, LIMITED, announces the issue of 2,500 6 per cent. second mortgage debentures of £10 each, the proceeds to be used for the improvement of the property.

THE ANGLO-MALAY RUBBER COMPANY, LIMITED, has declared an interim dividend of 15 per cent. in respect of the financial year ending December 31, 1911.

ULU BULOH (SELANGOR) RUBBER COMPANY, LIMITED. The directors' report, presented at the second annual general meeting of shareholders, held in Edinburgh, Scotland, June 26, shows a total acreage of 1,522 acres, of which 692½ acres are planted. Manager F. G. Harvey expected to have 12,000 trees ready for tapping July 1, from which he anticipated a yield of 12,000 pounds of rubber, before the end of 1911.

PERCIVAL FARQUHAR and DR. CARLOS SAMPAIO, who are said to have been in treaty for the purchase of 9,884 acres of land in the district of Igarapé-Assú, have left Pará for Europe.

"PARA VERSUS CEYLON."

ONE of the principal factors in estimating the future of rubber, is the prospective increase in the Oriental supply. In his interesting review of the subject (in the Portuguese language), "Pará Versus Ceylão," Senhor J. A. Mendes, of Pará, has grouped a number of statistical returns; extending the scope of his observations so as to include the Asiatic yield in general.

WORLD'S PRODUCTION AND CONSUMPTION.

Taking the natural starting point, the record of the world's production and consumption during the five years preceding 1910, the following result is shown:



CULTIVATED "HEVEA BRASILIENSIS" AT THE EXPERIMENT GARDENS, PARA.

	Production tons.	Consumption tons.
1905.....	69,507	65,727
1906.....	67,918	71,671
1907.....	68,646	64,628
1908.....	67,031	67,081
1909.....	69,372	70,075

Production and consumption thus kept on about a level during this quinquennial period.

Calling the annual production for 1909, 70,000 tons, its sources are shown to be approximately:

	Tons.
South America	40,000
Central America, etc.	12,800
Ceylon, Malay States, etc.	6,500
Africa	10,700
 Total tons.....	 70,000

While a normal or moderate degree of increase might be witnessed from other sources, Senhor Mendes gives prominence to that anticipated from Asia.

ASIATIC EXPORTS OF RUBBER.

Although the 1909 amount quoted is somewhat less than that already shown in the general summary, the general statistical

bearing of the figures below is not affected; as embracing the aggregate exports of rubber from Ceylon, Malay States, Sumatra, Java, India, etc.

	Tons.
1905.....	145
1906.....	510
1907.....	1,010
1908.....	1,800
1909.....	3,600
1910 (estimated).....	8,000

The gradual increase recorded for the more recent years, is the direct result of the development of planting. This view of the case is supported by the statement that there are now in the Malay States and Ceylon, over 600,000 acres, planted with more than 21,000,000 *Hevea* trees, almost in a productive condition; to the relative maturity of part of which is due the augmented figure of rubber exports.

FUTURE OF THE ASIATIC RUBBER SUPPLY.

Passing from the field of statistical record to that of estimate, it is not surprising to find divergence of views as to the increase to be looked for within the next four or five years in Asiatic exports, while the general prospect of a larger Eastern yield does not seem to have been questioned. Two pertinent estimates are quoted in this connection to Senhor Mendes, that of Mr. Rutherford (a gentleman largely interested in Eastern plantations) being to the following effect:

	Tons.
1911.....	8,100
1912.....	12,100
1913.....	17,040
1914.....	22,670
1915.....	27,300
1916.....	35,620

Far in excess of these figures is the anticipation expressed by Sir John Anderson (when High Commissioner of the Federated Malay States), that by 1916, the Asiatic production

would amount to 70,000 tons; that being, it will be noticed, just the amount of the world's yield in 1909. Applying the last named estimate to a forecast of the year 1915-1916, and contrasting the result thus anticipated, with the record for 1909, the following comparison is established:

	Production 1909 tons.	Estimate 1915/916 tons.
South America.....	40,000	43,780
Orient	6,500	71,940
Africa, Central America, etc.	23,500	26,522
 Total tons.....	 70,000	 142,242

Estimated increase of product, 72,242 tons.

COMPARISON OF BRAZILIAN AND ASIATIC QUALITIES.

While the question at issue has been mainly treated from a statistical point of view, an interesting and lengthy quotation from a recent article in the "Bulletin de l'Association des Planteurs de Caoutchouc," gives impartial prominence to a comparison drawn between the two classes of rubber. It points out that there is no chemical reason for preferring one or the other; both being of the same botanical family and produced under climatic conditions of a similar character. Moreover, it is added, there is no more difference between them than may be found between the products of different regions of the same country.

On the other hand, Senhor Mendes, while giving impartial prominence to the foregoing extract, urges the uniform character of the Pará article and the confidence in its use, which manufacturers feel after long years of experience. Reference is likewise made to the fluctuations which had, up to the time of writing occurred in the relative values of the two descriptions. These differences have, however, been more or less adjusted by later market developments.

Hence the statistical aspect of the case, apart from that of quality, calls for the prominent attention it has received.

THE QUESTION OF CONSUMPTION.

From figures already quoted, it will be seen that consumption in 1909 was 70,075 tons, as against production 69,372 tons. Whether the surplus to be figured upon is 70,000 tons or a smaller amount, at this point the question of consumption naturally arises and has been dealt with by Senhor Mendes. Taking for the future the basis of a 5 per cent. yearly advance on rate for 1909, he estimates consumption on the following scale:

	Tons.
1909.....	70,075
1910.....	73,573
1911.....	77,258
1912.....	81,121
1913.....	85,177
1914.....	89,436
1915.....	93,908

Deducting from the estimated production 142,242 tons the estimated consumption 93,908 tons, there would still remain in 1915 and 1916 a surplus production of 48,334 tons, should Sir John Anderson's anticipations be realized, or of 12,064 tons on the basis of Mr. Rutherford's predictions. The Asiatic supply is consequently the dominant factor in the situation.

ESTIMATED DECREASE IN AMAZONIAN PRODUCTION.

Of more immediate interest is the estimate by Senhor Mendes of the general result for the year 1910 and 1911, shown as follows in almost the last page of his work:

	1909/1910	1910/1911
	tons.	tons.
World's production.....	70,000	70,000
Increase from the East.....		4,000
		74,000
Decrease from the Amazon (10% of 1909 amount as)	3,913	
	70,000	70,087
Consumption	70,000	73,500
Shortage in production estimated 1910/1911		3,413

Against this shortage would come the excess in Pará stock, which was on January 1, 1911, 5,852 tons as compared with 3,278 tons a year earlier.

EFFECT OF ASIATIC INCREASE UPON BRAZILIAN RUBBER.

With reference to general prospects of the Brazilian product, it is remarked that the rubber from some *seringa*s or plantations may be exported at a profit, owing to its special quality, while the contrary may be the case with that from other locations, where labor is scarce and dear, should values decline through Asiatic competition, or should there be a reduction in demand concurrently with a large and increasing supply of the article. In these last expressions, Senhor Mendes has answered the question propounded by himself, of the probable outcome of present developments in the Orient. The final result will be decided by consumption.

BRAZIL AND THE MIDDLE EAST.

WHEN overtures were made to the Middle East plantation rubber interests to throw in their lot with the Brazilians by agreeing to a scheme for the marketing of the product, we ventured to maintain that such an amalgamation would not serve the best interests of the British investor. These interests are practically wholly centred in the plantation industry, and mostly in the industry as it exists in the Middle East. That these interests have suffered, and severely suffered, by the efforts made to rehabilitate the market value of the South American product is beyond question. That they would continue to suffer if any definite scheme for the joint marketing of the plantation and the South American products were adopted we most firmly believe. We desire to see the plantation product marketed in such a fashion as will admit of the highest legitimate profits obtainable accruing to the producers, who in this case are the plantation rubber companies primarily, but represent in reality thousands of British investors, who have found hundreds of thousands of pounds sterling. It will be seen by every Plantation Rubber shareholder what danger the future might contain for him were any selling agreement entered into at the present time with the wild rubber interests. It would mean not only an ever-recurring repetition of the state of affairs which has existed since the beginning of this year, but it would materially cripple the profit-earning powers of the plantations in years to come. For it would be inconceivable that the syndicate (regarding it as the Brazilian industry for the moment) would agree to any division of marketable supplies unless this division was based upon South American potentialities in this connection existing at present and likely to continue to exist for some time to come. Able, too, to insist upon such a recognition, the syndicate would be, for it could always bring the out-of-hand marketing of its held-up supplies forward as a threat if its wishes were not fully accepted in the fixing up of such an agreement.

Those who favor the adoption of a joint selling agreement for rubber have been pointing out that the danger which we see in such an arrangement could be obviated by a recognition of the supremacy of the plantations as producers some years hence. Without doubt, such a clause or clauses could be inserted in any such agreement. But the value of them? Surely the wildest optimist among plantation rubber shareholders must acknowledge the time will come when the selling price of the commodity will fall to a level that will admit of the product being sold at a profit only when working costs are low—say, at highest, about 1s. 6d. per lb. It has been alleged that when the time comes the Brazilian collection costs can be reduced to at least the maximum level we have just indicated. How far this allegation can be said to have a basis upon truth it is not very easy to say, but anyone at all acquainted with existing Amazon conditions would be among the first to admit that any such reduction is impossible to contemplate as probable for years to come. Furthermore, the prospects of remission of taxation being a factor in the bringing about of reduced costs may be dismissed as chimerical. The tendency, indeed, would be all the other way, since, without their revenues from their rubber export taxes, the Brazilian rubber States would be in worse financial positions than they acknowledge themselves to be to-day, and these positions are just as bad as they very well could be. It would be, consequently, one of the main objects of some of the partners in a joint selling arrangement to maintain prices at levels which would admit of their product being sold at a profit. The attainment of this end could only be achieved to the detriment of the other partners' interests; so it is permissible to ask, we think, how long such an arrangement could be expected to continue. We have asserted—and they have accepted our assertion as fact by their silence—that, in scheming out the operations in connection with

South American rubber prices this year, they over-looked plantation rubber as a factor in their calculations, or treated it as something negligible. Plantation rubber supplies more than anything else have contributed to the failure of their scheme, and may be responsible for the ultimate abandonment of it. Whether or not this means ruin to some of those who are implicated in it matters nothing to the plantation rubber shareholder, but what should matter to him would be the acceptance of any proposal to have the rubber market at the moment calculated to retain influences which could not fail to prejudice his interests in the future.—*The Financier*, London.

BALATA AND RUBBER IN BRITISH GUIANA.

RUBBER is constantly engaging attention in British Guiana, it being there anticipated that the Colony will eventually have to be reckoned with by the other rubber producing countries.

Some 800 acres are said to have been cleared at the Liberty Island property of the Essequibo Rubber and Tobacco Estates, Limited, on which 20,000 *Hevea Brasiliensis* rubber trees and 10,000 coconut, lime and other trees have been planted, and are doing well. The total rainfall for the six months, January to June, amounted to 85.14 inches, which is considered nearly ideal for rubber cultivation.

The Bartica Company, on the Essequibo river, has felled 700 acres of forest and have 600 ready for planting to *Hevea* rubber. They report 90,000 Pará seedlings now in their nursery, and expect to receive in October 200,000 Pará seeds.

The Department of Agriculture had perhaps 20,000 young *Hevea* seedlings at the beginning of the season. According to a recent visitor to Georgetown, if they had possessed a million the planters would have taken them, so great is the present interest in rubber culture.

BALATA AS A FACTOR OF BRITISH GUIANA TRADE.

The value attached to balata as a factor in the trade of British Guiana is illustrated by the following editorial comments in the "Daily Argosy" on the statistical returns for the last five years: "Balata is the sole item, the trade in which has extended to a degree of any importance; the increase in quantity for the fiscal year 1910-1911, compared with 1909-1910, being 10 per cent., while the increase in value reached the substantial figure of 43 per cent. . . . Balata, by which great store is set just now. . . . seems to be the heir apparent to the position which gold is abdicating. . . . The output has increased within five years from 634,242 lbs. to 1,162,588 lbs., or by 83 per cent. . . . while the value of the output has risen 178 per cent."

A little sound advice is tendered, which planters in all parts of the world might advantageously take to heart: "There is a danger attaching to this kind of property. The intoxication engendered by it may easily encourage extravagance, and allow of slackness of management which would not be tolerated in times of stress."

By the latest official statistics a diminution is recorded in the aggregate exports of balata from British Guiana, between January 1 and June 7 of this year, as compared with the similar period of last year. The respective quantities were: 1910, 166,300 lbs.; 1911, 136,000 lbs.; the decrease thus being equal to about 18 per cent. This reduction is attributed to prospecting and preparatory work having interfered with the actual collection of latex. By the latest accounts, more activity was noticeable in the last named direction, an early revival of exports being anticipated.

BRITTLE BALATA.

There are in British Guiana many trees that furnish what is known as "brittle" balata because of its resinous character. It is useless for commercial purposes. Mr. G. R. Stevenson, of Georgetown, professes to treat the latex and turn out good balata.

Interviewed by a *Daily Argosy* representative, he gave the

following particulars: "When I went up the Barima river I collected some of the latex of 'brittle' balata trees and I also got some 'brittle' balata from Mr. G. C. Benson, of the Edward Maurer Co. I won't tell in what way I did it, but I succeeded in inventing a process of converting it into balata of the purest kind."

Mr. Stevenson produced a biscuit of the balata which had come through his process and flapped it before the eyes of the interviewer. It was rubber-pink in color, and the way in which it bent as the inventor flapped it about was proof positive that there was absolutely no brittleness to it.

Continuing, Mr. Stevenson said: "In the forests of British Guiana there are vast areas of 'brittle' balata trees. If the latex is collected from those trees and subjected to my process the export of balata would go up considerably, and a new and remunerative industry would be established.

"I have succeeded also in discovering a process for preparing for the market a certain kind of rubber that is found here. The latex is obtained from a kind of *Sapium* tree commonly called 'Moboia,' which also abounds in various parts of the colony."

Mr. Stevenson describes his process as a chemical one, very simple, the cost of treatment being about one cent a pound.

BRITISH GUIANA REVENUE FROM BALATA DUTY.

The original estimates of the revenue for the Government of British Guiana to be anticipated from the balata duty seem likely to be materially exceeded by the actual receipts from that source. It is anticipated that the "Consolidated" will this year beat the record it created last year, while several companies formed in 1910 will collect a greater amount of balata than was previously possible.

THE AMSTERDAM BALATA COMPANY.

According to recent British Guiana advices it is understood that the Amsterdam Balata Co. has practically pledged itself to export a large quantity of the article in a given time, and that its shipments will very soon commence.

Mr. Van Flines, late of Surinam, is the local representative of the company, in connection with the management of which it is reported that an offer has been made to Mr. John Ogilvie, at present balata superintendent with Garnett & Co., Limited.

BRITISH GUIANA AND VENEZUELA BALATA.

THE question of repealing the ordinance prohibiting the importation of balata from Venezuela has been the subject of investigation by the Government of British Guiana. At a private meeting of the Balata Association, recently held at Georgetown, it is understood that, while the members were not opposed to repealing the ordinance, it was decided to send a letter to the Government containing certain suggestions.

According to a personal opinion previously expressed by a prominent authority it would be advisable for the Government to make regulations either to have Venezuela balata pass through some process of manufacture in British Guiana, or when shipped to have its origin clearly stated.

Of the many trophies presented at the International Rubber Exhibition in London, none was more artistic or attracted more attention than the President's Trophy, given by Sir Henry Blake, G. C. M. G. No entries were required for this trophy, a committee of judges awarding it after inspecting all of the exhibits. It fell to the lot of the Harburg and Vienna India Rubber Company, Limited, to win this trophy for the excellence of their varied exhibits of manufactured rubber goods.

ON JULY 1 A LAW IMPOSING AN EXPORT DUTY of 8 per cent., ad valorem, on all rubber exported from Peru went into effect. The valuations for the assessment of the duty will be fixed every two weeks by the treasury officials, on the basis of Liverpool quotations on rubber, cabled weekly from that city by the Peruvian consul.

INDIA RUBBER AND BALATA IN DUTCH GUIANA.

(By Our Regular Correspondent.)

WE note from "De Rotterdamer Courant" that the directors of the Balata Compagnie Suriname have sent the following circular to their shareholders:

"When we took over the balata business of Messrs. J. G. von Hemert and Henri Benjamin it was agreed that the net profit over 1910 should belong to the new company, and vendors guaranteed that this profit should be at least \$72,360; and that balances and accounts should be controlled by Mr. W. Kreuhniel, an accountant.

"This has been accomplished in Paramaribo, and Mr. Kreuhniel has sent in his report. According to this report the gross profit has been \$186,405. Costs of exploitation and materials has been \$48,025. On advances to laborers a loss has been written off of \$18,936. With a small profit on the timber business of \$218, the total net profit has been \$119,613, or \$47,301 more than has been guaranteed.

"It must be understood that the first book year of the company will be closed on December 31, 1911, so this profit will be a part of profit and loss account of that year; also the results of the business over 1911, and will include also the dividends of the shares taken over from the Balata Compagnie Guyana."

Under separate cover I send you for your library a brochure on "Pará Rubber Culture in Surinam," by A. W. Drost, assistant agronom to the Department of Agriculture in Surinam. I am very sorry that this book seems to be made up in a hurried fashion. Where statements are given, the date is omitted. The English translation is very bad, and I fear very often you will have to guess at the meaning. Some pictures are very fine, and show the luxuriant growth of *Hevea* in Surinam. On one page you are promised a picture of a *Hevea*, banana and coffee field on Wederzorg, but you look for it in vain.

Of course, among all this interesting information, you will look out for the "Costs of Establishing a *Hevea* Plantation." Mr. Drost gives some interesting figures, and shows that the laying out and the upkeep of one hectare (2.3 acres) until *Hevea* is productive is \$473, and that this amount is covered by the profit on the catch crops. It is not the place here, says Mr. Drost, to give a detailed estimate of the costs which are required for the exploitation of *Hevea* plantations. Where is the place then?

Very impressive is the photo of nine-year-old *Heveas* with cocoa as a sub-planting on Jagdlust Estate. Mr. Drost is strongly advocating intercrops or catch crops while growing rubber. In this Dr. Cramer, our agricultural director, is the opponent of his assistant agronom, see his book on rubber cultivation, 1910. To whom shall the practical planter listen? The effects of most intercrops are certainly: that the growth is slower and the ultimate yield of rubber is less—you will never be able to cut three backs from one hog—but if a good market for catch crops is near, transport cheap and easy, laborers at hand, the profits on a catch crop can be so considerable that it is wise to plant them, even if it should delay the profitable tapping of rubber from five to seven years, as Mr. Drost asserts.

It is, however, an established and known fact that at some Surinam estates the tapping of five-year-old *Heveas* grown up with bananas has been very remunerative, and that under the most favorable conditions the first tapping of *Heveas* can take place even at the age of 3½ years.

HEARD ON THE PLANTATION.

First Rubber Tree.—"Isn't it awful! They are really producing synthetic rubber in England. Aren't you frightened?"

Second Rubber Tree.—"Yes, indeed! The very thought of it sends cold shivers down my back."

FORMIC ACID FOR LATEX COAGULATION.

THE problem of the best and cheapest coagulating agent has, it is claimed, been solved by the Fabrick van Chemiche Producten (Factory of Chemical Products), Schiedam, Holland, with its latest preparation of formic acid. Expert investigation having apparently demonstrated the advantages resulting from the use of acids in coagulation, the question of the most suitable one still remained for discussion.

On behalf of formic acid, it has been urged that it is not only the cheapest in price of the organic acids, but that it is more powerful in its action than other compounds of that class. The makers claim that they are in a position to offer a grade containing 90 per cent. of free acid, with specific gravity 1.20, 46 parts of which are theoretically equal to 60 of acetic acid .63 of oxalic acid, 70 of citric acid and 75 of tartaric acid. It is described as an effective and antiseptic coagulating agent, without any harmful effect upon the rubber and preventing agglutination. In view of the admittedly extensive use of acetic acid in the Federated Malayan States and in Ceylon, interest attaches to the statement that the tests of Spence prove that the rubber obtained by a treatment with formic acid is as good or rather better than the product obtained by the use of the other agent named.

Formic acid has only been used for technical purposes since the year 1903, when Dr. Goldschmidt discovered a cheap process for the manufacture in quantity of what had previously been a laboratory product.

In "Crude Rubber and Compounding Ingredients" (pp. 37 and 98) reference is made to the fact that formic acid had been suggested as an ideal precipitant for rubber milk, being used instead of acetic acid in coagulating *Hevea* latex.

RUBBER PLANTATIONS FOR BOSTON.

THE country newspapers are publishing an item to the effect that crude rubber, at the cost of 15 cents a pound, can be produced in the hot regions of the United States just as easily as corn can be raised. That is, according to the claims of an American who has been in Mexico several years experimenting with plants from which rubber could be taken in paying quantities. He claims to possess a tree, a vine and three small plants which may be cultivated by planting the seed or cuttings. The latex of the tree contains 6 per cent. of crude rubber. The vine may be grown on trellises and will give 8 per cent. of pure rubber. Both these rubber producers may be grown fit for cutting in three years, then trimmed to the roots each season and left to keep that process going for years.

According to weather reports Boston was the hottest place in the United States this summer. If Mayor Fitzgerald is in earnest in his efforts for a greater Boston he will at once cover the Common, the Public Gardens and the Fenway with these trees and vines.

QUITE RECENTLY AN illustrated lecture on india-rubber was given at the magnificent theatre da Paz, Pará, by Sr. Amando Mendes, the subjects being "Rubber Planting in the Far East" and "Rubber Manufacture in the United States." For the first lecture there were some 60 views covering the whole topic of rubber planting, tapping, coagulation, etc., in Ceylon and the Malay States. The second section which was introduced by a review of manufacture in the United States as a whole was illustrated by some 60 views showing processes in the leading factories throughout the country and then exterior views of the larger factories making rubber boots, shoes, tires, druggists' sundries, clothing, etc., etc. A very large audience was in attendance and much interest was shown. The lantern slides were prepared by the editor of THE INDIA RUBBER WORLD and presented by him to the Museu Goeldi in Pará.



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Shall Crude Rubber Be Listed?

FOR several months there has been a movement on foot looking toward the listing of crude rubber on the New York Produce Exchange. As a preliminary to a thorough examination into the subject the INDIA RUBBER WORLD has secured opinions from a number of those most interested, rubber manufacturers and importers and exchange members.

THE PRODUCE EXCHANGE—A BRIEF DESCRIPTION.

The New York Produce Exchange is a great big market place. Nothing more, nothing less. On its floor wheat, corn, rye, oats, barley and other grains, flour, meal, hops, hay,

To trade with each other as principals and for others as brokers and commission men.

To make initial arrangements for the care of all the details incident to business transactions, such as freight engagements, insurance, inspection, warehousing, delivery, etc.

It is, moreover, a market place where all transactions are safeguarded; where men must deliver what they sell and pay for what they buy; where, by force of all the circumstances, honesty must prevail, for here customs of trade have crystallized into rule and regulation, all grades and qualities are carefully defined and all trade terms and phrases clearly understood.

Each one of the various trades, such as the Flour Trade, the



THE QUOTATION BOARD, NEW YORK PRODUCE EXCHANGE.

straw, seeds, pork, lard, all sorts of meat food products, tallow, greases, cottonseed oil and various other animal and vegetable oils, naval stores of all kinds, butter, cheese and other commodities are bought and sold in quantities ranging from a single package to whole cargoes.

It is a place where men engaged in various mercantile pursuits and in allied industries, gather for various purposes.

To keep in touch with each other and thus in touch with all that is going on in the business world.

To gather daily information concerning growing crops, stocks of merchandise, movements of produce, current quotations for all sorts of produce in all markets of the world.

Grain Trade, the Cotton Oil Trade, the Steamship Trade, etc., is to all intents and purposes an exchange by itself. Its members meet together in a given place on the floor. It is presided over by a trade committee, which interprets its rules and decides all disputes under the rules. It makes its own rules and regulations, subject to the approval of the board of managers; and in the making of its rules every trade member has a vote, thus making its rules the composite judgment of all interests concerned therein—great corporation, small dealer, buyer, seller, broker, commission man, exporter, etc.

Over and above these rules are the by-laws and rules of the Exchange itself, apply to all trades and have to do largely

with the internal affairs of the corporation and its membership.

The Exchange itself is merely the organized machinery of a great market place. Its main chartered purposes are:

To maintain a suitable room for such market place.

To inculcate just and equitable principles in trade.

To establish and maintain uniformity in commercial usages.

To acquire, preserve and disseminate valuable business information, and

To adjust controversies and misunderstandings between persons engaged in business—and this is all that it does.

In discharging its functions, it appoints and licenses, on the nomination of the various trades concerned, inspectors and weighers; maintains a grain inspection bureau, a flour inspection bureau and a chemical bureau for the official analysis of certain food products. It provides machinery for the adoption of trade rules and their enforcement. These trade rules apply to the non-member as well as to the member, and the non-member as well as the member has the privilege of using the machinery provided by the Exchange to compel their enforcement.

Through its rules for the handling of business, large economies of labor and expense are effected, and it virtually becomes a great clearing house of commerce.

It has general agreements with warehousemen, with great railroad lines, with various steamship and other maritime interests, covering the general needs of the trade at large, and in many instances these agreements have resolved themselves into forms of bills of lading, charter parties, etc., and are used generally in the commerce of the port. Agreements with the railroad companies also provide for the grading of grain at the railroad terminals in such manner as to effect large economies in labor, expense and terminal space. In the matter of grain, even the charges for receiving, weighing, discharging, towing, lightering, blowing, screening or dusting, etc., are subject to general agreements entered into by the Exchange and the various interests concerned therein.

It takes a large interest in all matters pertaining to the development of the commerce of the port of New York, and is constantly striving to bring about improvements in the various trades in the manner and method of handling their business; and it co-operates with the public authorities in every public work looking to the improvement of conditions in this port, as, for instance, matters such as the new barge canal, adequate dock facilities, etc.

It may be of further interest to note a fact that all merchants are well aware of—that an open market in which there is large trading tends to minimize fluctuations in value. A narrow market means violent fluctuations, but a great, broad market, capable of absorbing all business thrown into it, reduces fluctuations in values to a minimum.

Of course, in the same degree that the Exchange makes trading easy and safe for the merchant, it makes trading easy and safe for the man of a speculative turn of mind who wishes to act on his judgment as to values in precisely the same way that the title guarantee and trust companies, in combination with great estates and other financial interests, making it easy and safe for a poor man to buy a home or for anybody to buy real estate, make it, in the same degree, easy and safe for the man of a speculative turn of mind to buy and hold real estate for an advance in value. In this connection it should be remembered that, though by the perfection of its machinery for the handling of business transactions, it enables men to make speculative purchases and sales, it also, by the same perfection of machinery, enables merchants to remove entirely the element of speculation from their business.

Such, in brief, is the New York Produce Exchange, and such are some of its functions. The institution itself is in excellent condition. It has a property large enough to act as a permanent

endowment, insuring its easy maintenance. Its membership is united in thought and purpose. Its gratuity problems have been practically solved, and the only problems confronting the new officials are those of administration, and to these problems we propose to give our best thought, care and attention.

EDWARD R. CARHART,
President New York Produce Exchange.

OPINIONS OF THE TRADE.

FROM A MEMBER OF THE PRODUCE EXCHANGE.

TO THE EDITOR OF THE INDIA RUBBER WORLD.

Sir:—Referring to your recent editorial regarding the listing of crude rubber, would say that I am comparatively new to the rubber business, most of my business experience having been in other lines. One of the first things that struck me, however, after getting interested in rubber, was that a manufacturer or dealer really has no way of hedging his purchases or sales. There is hardly another commodity traded in of the volume and value of rubber, without an open official trading market.

There is a market in London, but America, with all its vast rubber interests, has none, and it seems to me that we ought to have an open official market here and not be dependent on the speculative Englishman. America probably now is and surely will be the largest consumer of rubber and ought to lead rather than follow.

If a cotton manufacturer wants to book a big future order, say for next December, he can buy this cotton future in the open market and fix his cost of raw material at once and does not have to tie up all his capital either—really does not have to pay a cent, until his future purchase is due and delivered, just when he wants it.

A cotton oil refiner buys his crude oil based on the market of the future month, which will give him time to refine and deliver the refined oil against his future sale and the price he pays for the crude oil is the future price of month sold, less refining costs, freight and his manufacturing profit, thus eliminating all speculation from his business. If before delivery is due, the manufacturer can market his oil in domestic or export trade to better advantage than delivering against future sales, he simply sells the refined oil and buys back his future contract in the official trading market.

I know oil refiners that are never either long or short of oil—keep everything always hedged, both in buying and selling and thus assure at all times their manufacturing profit, and I may say right here that the more conservative a manufacturer is, the more he will make use of an open market when he can always buy or sell any trading future to hedge the purchases and sales of his factory. If he wants to speculate, he can and will do so as an individual and not involve his manufacturing business in a speculation.

It is the same way with provisions and grain. If a packer or shipper gets an export order, for say December shipment, he buys a December future, bases his selling price on the cost of the future—no money involved except market differences until time for shipment and whether the market advances or declines is really a matter of indifference to the shipper.

Whether or not as entirely satisfactory, a trading market can be developed in rubber, is for the future to decide. There may be some difficulties in determining grades and standards, units of trading, commissions, etc., but I see no insurmountable ones.

Then some will say an open market will tend to speculation, but so far as the manufacturer and dealer is concerned, it will have exactly the opposite effect; it will eliminate speculation if they take advantage of it. Nearly all business is more or less speculative—of necessity must be so. An open market certainly lends itself to speculation, but if one must speculate, and most people do at times, by all means trade in an open, active market,

where you not only can buy but can also sell and get out when you want to.

The open markets have their quotations generally published, so nearly every one hears of the fluctuations, but the fluctuations seldom compare with or are as wide as in commodities without the benefit of an open market. The speculator, pure and simple, is very apt to act as a governing valve—he makes it his business to get full and complete information of stocks, figures on demand and probable future supplies, and if the market goes to extremes, either way, either goes short or long as the case may be and checks the movement. Some of the big commission houses have their experts always in the field, going from crop to crop; cotton to corn and wheat and from country to country, reporting on crop conditions and reserves still in first hands. These reports come in continually and supplement the Government reports issued from time to time, so that the farmer in Kansas, as well as the trader in Chicago or New York, know at all times the conditions covering crops and stocks all over the world.

With an open active future trading market here, I do not think rubber, last year, would have sold up to \$3.00 per pound, as many traders would have sold it on the advance before it reached that limit which every one familiar with conditions felt was an artificial, hysterical price which could not be maintained, and a price which never should have obtained, and which was demoralizing to legitimate business and manufacturers.

The advantages of an exchange like the New York Produce Exchange is that it systemizes trading and enables traders in every commodity to trade under rules which all members have to live up to. It has committees to arbitrate and settle all disputes, without the delay and expense of the courts, and as the committees are business men, thoroughly conversant with trade customs and commodities, their decisions are very likely to be nearer exact justice than a judgment by a court based on technicalities or legal quibbles. The exchange has the machinery for collecting statistics from all markets and the statistics for another commodity can be easily added, at a minimum expense. This information is for the benefit of all members and probably would be much more complete than any now obtainable, except at a great expense for cables.

An exchange with regular trading hours also brings all the active traders in any commodity together, so that they can all get better acquainted with each other.

An exchange is nothing more or less than a common meeting place for the comfort and convenience of traders in a commodity where they can trade under equitable rules and with assurance that each and every trader will have to live up to his trades and obligations.

I feel that an open official spot and future trading market under the auspices of an exchange, with proper trade rules and committees to control trades, and its facilities to gather and disseminate information, would tend to broaden the interest in rubber—enable the manufacturer to eliminate speculation and prove beneficial to the trade in general. It has proved so with other commodities, and I think a fair trial with rubber would work out the same way.

Yours respectfully,

New York.

ARTHUR DYER.

TIME NOT RIPE YET.

Replying to your letter, my opinion is that the time is not yet ripe to list crude rubber on the New York Produce Exchange. At present the price of crude rubber is largely regulated by speculative influences and not by the natural law of supply and demand. I do not believe it would be for the good of the trade to enlarge the field for speculation.

If the present rate of increase in plantation receipts continues, we will soon have much greater stability in the market price of rubber. We could then discuss the advantages and disadvantages

of having it listed, but at present I do not believe that the Exchange could offer any inducements which would offset the harmful result of bringing more outside speculators into the field.

Very truly yours,

BERTRAM G. WORK,
President, The B. F. Goodrich Co., Akron, Ohio.

MARKET CONDITIONS DIFFERENT HERE.

Referring to your letter, I would say that I have delayed reply in order to give the matter thoughtful attention, which I have now done.

I cannot see how it would be of advantage to the manufacturers to have rubber listed upon the New York Produce Exchange. The business in this country is done on an entirely different basis than in other countries. Here it is done direct between importer and consumer. There it is done through brokers. In the foreign exchanges the broker having his orders to buy or his inquiry from the consumer for a price, goes to the Exchange at certain hours daily. The seller also passes certain hours daily "on 'change," and the two meet and make their trades together on the floor of the Exchange. Here manufacturers do not employ brokers, but the buying is done by the principals themselves, and these principals are too busy with the details of their manufacturing to pass their time at the Exchange, even if their headquarters were in New York, and, as you know a large part of the consumption of rubber is by people a long distance from New York, I doubt if any of the principals would care to entrust to others the buying of their rubber supplies. Unless these people would become members of the Exchange and pass their time on the floor, I cannot see how the listing of quotations could benefit them.

I can see where advantages could be derived through the establishment of boards of arbitration, of classification and inspection, but unless the rubber people should become members of the New York Produce Exchange and thus bear their share of the expenses of maintaining the Exchange, then that body would not, of course, be likely to interest themselves in the affairs of the rubber people, and I doubt if the latter could be made to see sufficient advantages to encourage them to the necessary expenditure.

Sincerely yours,

A. W. STEDMAN,
New York Commercial Co., New York.

FEAR IT WOULD ADD TO SPECULATION.

With regard to the subject of your letter, the writer has too little information to form an intelligent opinion as to whether the plan, if carried out, is liable to result to the benefit or detriment of rubber manufacturers and therefore, manifestly, is in no position to give an expression for publication. Beyond what you have written and the rumor that the subject had been mooted, we have no knowledge of the details of the plan or what would be involved. If the listing of crude rubber tended toward making the crude rubber business any more speculative than it is at present, as we fear it might, our opinion is that it would be detrimental to manufacturers' interests generally. However, it would be useless for the writer to attempt any opinion without more knowledge of the working plan.

Yours faithfully,

C. N. CANDEE,
Secretary and General Manager, The Gutta Percha & Rubber
Mfg. Co. of Toronto, Limited.

FAVORS SEPARATE ORGANIZATION.

Replying to yours of recent date, I beg to say that any action on the part of the users of crude rubber that would standardize the quality, regulate prices, and assimilate and distribute information, would be, in my judgment, a move in the right direc-

tion. Whether this could best be accomplished by the manufacturers of rubber joining the New York Produce Exchange, or whether it would be more advantageous to them to form a separate and distinct organization for this purpose, is a question that, to my mind, needs very careful consideration before any decision is rendered, but that something should be done to give the consumers of crude rubber a more comprehensive view of the situation, is imperative.

To that end, I think, it would be advisable for the manufacturers to hold a meeting and have the matter clearly presented to them, so that each one individually could take the matter under consideration and render his decision, after mature consideration.

Yours very truly,

Jos. O. STOKES,
President, Thermoid Rubber Co., Trenton, N. J.

WOULD FACILITATE SPECULATION.

We beg to acknowledge the receipt of your favor in reference to listing crude rubber on the New York Produce Exchange.

In reply to your request that we give you our ideas on this plan, would say that we are opposed to listing crude rubber on any Exchange in New York, as we believe it would facilitate speculation, and all manufacturers are now suffering severely from too much speculation in crude rubber.

We would prefer not to have our views published, but are willing to express them to anyone making inquiries.

FROM A LARGE MANUFACTURER OF INSULATED WIRE.

MARKET DIFFICULT TO CREATE.

Replying to yours as to listing crude rubber on the New York Produce Exchange, will say that, as a buyer of rubber, naturally I would be very glad to see a market for it in this city, but having had considerable experience on the exchanges in Wall Street, I realize how hard it is to create a new market for any material. It requires great perseverance and tact.

Should the plan prove successful, one great advantage would accrue to the small buyer, viz: he would have an opportunity to know the market price for the various grades of rubber in Brazil and abroad, as doubtless official telegraphic quotations would be kept in this city. As you know, at the present time only the very large buyers are in touch by cable with the rubber markets of the world.

R. E. GALLAHER,
New York Insulated Wire Co., New York.

DEPENDS UPON EFFECT.

I have your letter and, responding, have to say that I have given the subject no thought, and am not prepared at the moment to give an opinion as to the wisdom of opening a rubber exchange.

If such action would give stability to the market and minimize fluctuations in prices, I would be inclined to treat the matter favorably, but if its intent would be to stimulate speculation I would be opposed to it.

Very respectfully,

F. A. SEIBERLING,
President, The Goodyear Tire & Rubber Co., Akron, Ohio.

PRESENT METHODS SATISFACTORY.

Yours on the subject of listing crude rubber on the New York Produce Exchange received and noted. I really do not feel that I know enough about this matter to give an intelligent opinion for public or private circulation. As far as I can see the present methods of marketing crude rubber work out pretty satisfactorily, and I don't see what would be gained by a change of this sort.

A. F. TOWNSEND,
President, Manhattan Rubber Mfg. Co., New York, N. Y.

WOULD STOP LONDON MANIPULATION.

In reply to yours relative to a proposed plan to list crude rubber on the New York Produce Exchange, generally speaking, I think the move would be a good one, although in our particular line the consumption of rubber is not great, and for this reason think that our ideas should not be seriously considered or given any publicity. There might be an objection to listing rubber on account of the general information it will give the buying public, which information will create a tendency upon the part of the buyer to demand revised prices every time there is a drop of a cent or two in the price of crude. On the other hand, this cannot be a real objection for the reason that for many months past the rubber game has been given wide publicity by the press, and in many instances statements were made that were more injurious to the manufacturer than a true report of actual conditions.

In favor of listing rubber are two conditions that I believe the listing would have a tendency to overcome. The one is that at the present time the prices on crude are made in London, and the American manufacturer is a victim to a greater or less extent of the gambling tendencies of the London manipulators; the other, that the average manufacturer, especially the little fellow, who is not in direct touch with the market through a disinterested channel, must depend more or less on information furnished by the brokers, and this information is usually in keeping with the broker's ideas, or, rather, biased by his own position and the way he is "hooked up" with the market. I believe the time will come if the American manufacturer is placed in position to own his raw materials on as favorable a basis as his European competitors, and can secure facilities for transporting his merchandise and conducting his banking equal to the facilities they now enjoy, that Mr. American Rubber Manufacturer will secure at least his share of the world's rubber business, especially in Central and South America and the Far East.

FROM AN IMPORTANT RUBBER SUNDRIES MANUFACTURER.

WILL WELCOME ANY CHANGE.

Answering your inquiry as to the advisability from a manufacturer's standpoint of listing rubber on an exchange:

Rubber makes a good football and is peculiarly subject to acceleration upon the impact of a good strong kick. To see it go, when it moves in the right direction, is a joy to the big as well as to the small boy. The sport is a good one, but somehow it loses its zest to the manufacturer when he realizes that rubber, the basis of his business, has been converted into a speculative football, to which the necessities of his business compel him to cling for some three hundred and odd days in a year. He soon begins to realize in his own person somewhat of the punishment that the ball has to take.

I wish, therefore, to say that I deplore the rapid, violent and extreme fluctuations which have occurred in recent years in the price of rubber. I believe it to be detrimental to the interests of the individual manufacturer, the industry, the trade and the public. I shall welcome any change that will place the basis of our industry upon a more decent, stable and legitimate basis.

If listing on an exchange has for its purpose the correction of excessive speculation and is in the interest of legitimate business, I would be most happy to have it done, but if, on the other hand, its hidden purpose is to facilitate speculation, I hope it will not be done.

I realize that in this communication I have not given you a direct answer to a direct question, but to do so intelligently would entail a study of conditions which I have neither the time, experience nor qualifications to undertake.

Unless these fluctuations in the price of rubber are controlled within reasonable limits the time will come when the old-

fashioned methods of economy, efficiency and control may be subordinated to "taking the gambler's chance."

I am glad that the INDIA RUBBER WORLD is interesting itself in a matter so vital to the welfare of our industry, as I am convinced that we shall continue to be the victims of speculative endeavor until such time as an international association of manufacturers is formed to minimize this evil.

Very truly yours,

ALEXANDER M. PAUL,
President, Davidson Rubber Co., Boston, Mass.

NO BENEFIT TO THE MANUFACTURER.

I do not know that I can offer any suggestions which would be of any benefit in regard to selling crude rubber on the New York Produce Exchange. I think there would be a tendency to further speculations in crude rubber and it would be of no benefit to the manufacturer; on the other hand, the manufacturer would like the speculative feature in crude rubber eliminated as far as possible.

Therefore, in summing it up, my opinion is it would not be a good thing for the manufacturer.

THE FIRESTONE TIRE & RUBBER CO.,
H. S. FIRESTONE, President.

LEAD TO HIGHER PRICES.

At the present time I do not see any benefit to the manufacturers by having crude rubber listed on the New York Produce Exchange, as I think it might lead to higher prices through speculation.

FROM AN IMPORTANT CANADIAN MANUFACTURER.

LEAD TO WILD SPECULATION.

I have to acknowledge receipt of your favor and, in reply, in my opinion, the listing of crude rubber at the New York Produce Exchange would not in any way help rubber manufacturers but would be detrimental to their interests and would no doubt open up wild speculation similar to that which has been carried on in England.

The market for crude rubber is so narrow that it would be possible for a few concerns to combine together and control it with success. However, should plantation rubber increase in volume, as we expect it to do, conditions might change considerably, but with all the pros. and cons. I think it would be rather a serious injury than a gain to the rubber trade.

AN AMERICAN MANUFACTURER IN ENGLAND.

REFER IT TO RUBBER CLUB.

I am very much interested in the proposal to list crude rubber in New York. It occurs to me that the Rubber Club of America might interest itself in the matter and decide upon its wisdom. It has a membership that is widely distributed and has already done so much to unify the trade that perhaps it can do more.

A NEW HOME FOR THE UNITED STATES RUBBER COMPANY.

AUTOMOBILEDOM, in New York, will shortly be graced by a remarkably handsome building which the United States Rubber Company will erect, for the accommodation of its various departments, on the south-east corner of Broadway and 58th street, on a plot 108 x 126 feet.

As the accompanying illustration, reproduced from the architects' front elevation, shows, it will be not only a lofty but an imposing edifice, the fronts being in somewhat freely treated Renaissance style, the idea being to divide each front into upper and lower parts, on account of the great height, and to make the lower portion as most directly under observation, from below, the most ornate. A cornice, of massive proportions, crowns the

twenty-story structure; both fronts will be of white Vermont marble. The entire interior will be of fireproof material and each floor, of 6,300 square feet area, can be subdivided into seventeen offices, varying from 280 to 630 square feet in area. The mechanical equipment, including freight and passenger elevators, vacuum cleaner, heating, ventilation, fire protection, etc., is to be of the



UNITED STATES RUBBER COMPANY'S NEW BUILDING.

most improved modern character. To add to the stability of the structure and enhance the utility of the below-ground space, the foundations will be carried to bedrock and the basement and sub-basement fully waterproofed.

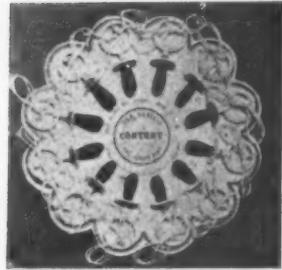
The roomy, well-lighted store, on the ground floor, will be occupied, when the building is complete, by the United States Tire Company and they will also use a portion of the basement and sub-basement, for storage purposes. The greater portion of the upper part of the building will be occupied, as offices, by the United States Rubber Company. Carrere & Hastings, New York, were the architects of the building.

New Rubber Goods in the Market.

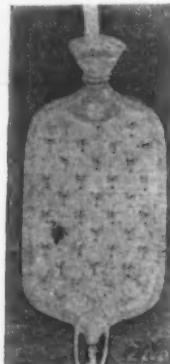
ARTISTIC RUBBER SUNDRIES.

A STEADY advance in the production of truly artistic rubber goods, both in shape and in color, has marked the last few years.

The illustrations from the latest catalogue of the Tyer Rubber



"BABY'S CONTENT,"
NIPPLE AND RING.



COVERED WATER
BOTTLE.



FANCY WATER BOTTLE,
WHITE, SLATE TRIMMINGS.



MOTTEL BULB SYRINGE.



STEPNEY "ROAD GRIP" TIRE.

Company, an exceedingly artistic publication of 150 pages, are excellent examples.

A NEW "STEPNEY" TIRE.

THE Stepney spare wheel, an English invention successfully marketed in the United States, is known to all motorists. It is interesting to know that the company who made a success of

the spare wheel have just brought out a new tire, which they call the "road-grip." It is spoken of as a non-skid device, which it may or may not be. It should, however, secure a very tenacious grip forward or backward. It ought also to keep any wheel from spinning, and locked wheels would not be likely to slide

backwards when equipped with this tire. [Stepney Spare Motor Wheel Co., London.]

YACHTING AND POLAR BOOTS.

At first these specialities will appear a trifle cumbersome to the American yachtsman, whose fancy runs more towards trim rubber soled duck-topped goods in white. For the English Channel and the North Sea, and indeed very often for the Ameri-



POLAR RUBBER.

YACHTING BOOT.



HALF POLAR RUBBER.

can Atlantic waters, the boot would, however, be exceedingly comfortable. This, together with the heavy polar and half-polar overshoes are the produce of the same makers. [North British Rubber Co., Edinburgh, Scotland.]

THE FISK "CLINCHER" FOR BICYCLES.

The general feeling has been that America was wedded to the single tube bicycle tire. Such a belief, however, disappears when a company that has been in the bicycle tire business from



THE FISK CLINCHER BICYCLE TIRE.

its beginning suddenly puts on the market a high grade and attractive clincher tire. It is said that the manufacturers of wheels are taking to it kindly and it will find a ready market. [The Fisk Rubber Company, Chicopee Falls, Massachusetts.]

A RUBBER CIGAR HOLDER.

A cigar holder of soft red rubber looking like a truncated nursery bottle nipple has appeared upon the market. At first it does not appeal to one, but a second look suggests points in its favor. For example, so many men were once bottle babies that their earliest and pleasantest associations cluster around a bit of rubber almost identical in shape with the cigar holder. It may happen, therefore, that the seasoned smoker may derive added comfort by sucking smoke through the rubber teat and live over again the days that are gone.

RUBBER BASIN FOR MOTORISTS.

The motorists wash-up outfit, in a neat, compact, leather case, consists of a folding rubber wash basin, Turkish towel, wash

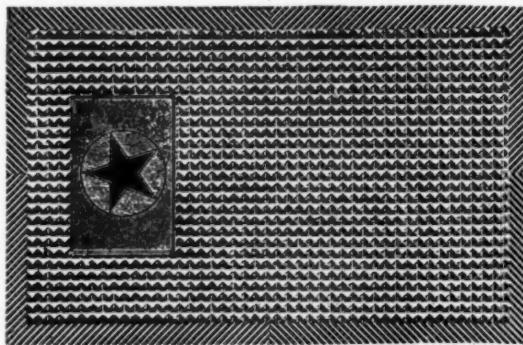


MOTORIST'S "WASH-UP" OUTFIT.

rag in a rubber cloth pocket and a soap box. [C. F. Rumpp & Sons, Philadelphia, Pennsylvania.]

THE VICTOR CARRIAGE MAT.

Very artistic designs in rubber mats, matting and treads for both the carriage and automobile trade have been designed dur-



VICTOR CARRIAGE MAT.

ing the last few years. A good example is the "Victor," shown in the accompanying illustration. [Victor Rubber Co., Springfield, Ohio.]

PAINTING RACK FOR GOLF BALLS.

THIS is a small steel frame that pivots and holds 6, 12 or 36 balls. The first two are for the ordinary player, while the last

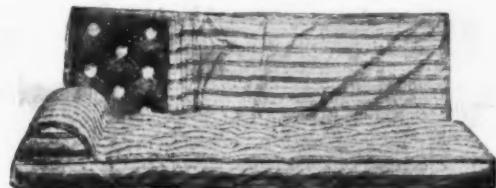


GOLF BALL PAINTING RACK.

is intended for professionals. By its use a great deal of annoyance is saved as the device is simple, clean and thoroughly practical. [The Golfers Supply Co., 124 W. 56th street, New York.]

PNEUMATIC MATTRESSES.

The air mattress is not new, but is exactly as popular as ever it was. The Perfection herewith illustrated has been mentioned before in THE INDIA RUBBER WORLD. The particular reason for its recurrence at this juncture is due to the fact that the com-

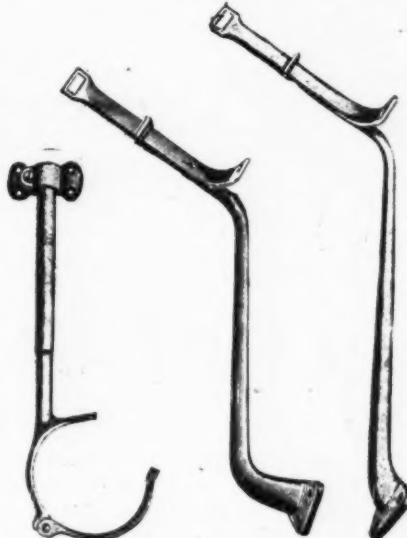


PERFECTION AIR MATTRESS.

pany are supplying with one of their air mattress what is known as "The Gem" sleeping bag. Today, when all who can afford to do so are getting out in the open during the day, and occupying sleeping porches at night, the combination of air mattress and sleeping bag is bound to hit the popular fancy. [The Pneumatic Manufacturing Company, 526 Seventeenth street, Brooklyn, New York.]

HARD RUBBER TIRE HOLDERS.

With the advent of the fore door arose the demand for a new type of tire holder much simpler and more ornamental. This is



HARD RUBBER TIRE HOLDERS.

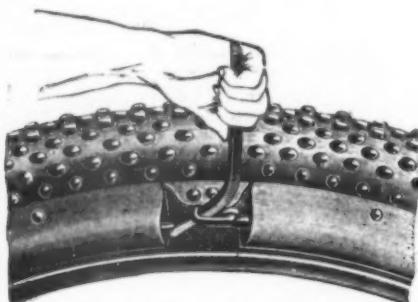
met particularly by the holders finished in polished black hard rubber, as are those we illustrate. [Le Compte Manufacturing Co., 44 Elm street, Newark, New Jersey.]

RUBBER BANDS INSTEAD OF HAT PINS.

Commenting on a recent proclamation, made by the police of Vienna and other European cities, against the wearing of hat pins, the unprotected points of which project beyond the brims of the hats they are used to secure, and which are denounced as a menace to public safety when worn in public conveyances or crowded resorts, a contemporary suggests a return to the elastic bands, with which the wearers of "millinery" were wont to secure them in bygone years. Our contemporary intimates that the best of the "protectors" proposed for the dangerous points, are unsatisfactory, whereas, the elastic band, of a color to match the hair, would be inconspicuous and sufficiently secure. And what a boom in hat elastics the rubber industry would enjoy.

A NEW WOODWORTH TREAD.

THEY call it the "Center Studded." It is made of somewhat lighter leather than in the past and is steel studded only on the center portion. It is designed for city use or on smooth



CENTER STUDDED TIRE TREAD.

roads. It is especially adapted for trucks, taxicabs and vehicles of that type. The illustration shows the quick fastening device. [Leather Tire Goods Co., New York, New York.]

RUBBER GOODS FOR INFANTS.

These cover a long line of exceedingly neat productions made of rubber sheeting and impervious to water, acids or alkalies.



BABY PANTS.



TABLE APRON.



TRAP BIB.

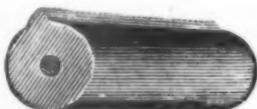


COVERALL BIB.

They embrace many styles of baby pants, table-aprons, bibs, etc. [The I. B. Kleinert Rubber Co., New York.]

THE RIDGE OKONITE.

Very few automobilists know much about the type of insulation used in wiring their machines. There is no reason, however, why they should not be able to recognize the products of the best manufacturers. The Okonite Co., that such recognition



OKONITE INSULATION.

may be easy have a tiny ridge projecting from the surface of their insulation. An excellent idea; something easily remembered and recognized at a glance. [The Okonite Co., 253 Broadway, New York.]

FOR CLEANING RUBBER TIRES.

THE very effective little scratch brush here shown is for cleaning rubber tires before vulcanization, that is to say it is actually for cleaning tires that are to be repaired and then patched and



RUBBER TIRE CLEANER.

vulcanized. It is either belt or motor driven and a tremendous time saver. In fact this little machine is just in the line of modern efficiency. [The Stow Manufacturing Company, Binghamton, New York.]

HARD RUBBER CONNECTORS.

The story of connectors in connection with the automobile is not a long one. About all one can say is that a high grade of hard rubber is better than any other material and that the



HANDY CONNECTOR.

"Handy" Ediswan is of the best type; that it never jars loose. [The Chicago Electric Manufacturing Company, Chicago, Illinois.]

RUBBER MAKES IT SAFE.

The fire-cracker has much against it: The "Sane Fourth" people will probably never give over their war against it. They can hardly object, on the score of danger, to the new "Safety Cracker" here illustrated. It is in brief, a



"THE SAFETY CRACKER."

steel magazine handle

to which is attached a strong rubber ball, having an open, circular aperture on its upper side. A strip of paper that leads through the handle, closely covers the hole and on the lower surface of the ball being struck sharply against an unyielding surface, the resultant compression of the air within the ball, bursts the paper over the hole with a sharp report. By moving the paper forward, so as to present an unbroken surface, the operation may be repeated *ad lib.*, strips of ordinary newspaper, cut to right width, furnishing ammunition should the strips furnished by the manufacturers be exhausted. [A. C. Barler Mfg. Co., 58 W. Lake St., Chicago, Ill.]

A NEW rubber sole for sporting shoes has appeared on the English market. In appearance it is radically different from the ordinary black, grey or red rubber product. At first glance it appears to be a very close, thick felt, but it is said to be made of rubber and asbestos. It wears exceedingly well, has practically no odor and does not draw the feet, for the last named reason it makes an excellent deck shoe.

THE RUBBER TRADE AT AKRON.

BY A REGULAR CORRESPONDENT.

THE B. F. Goodrich Company is publishing the campaign to educate tire users to a more perfect understanding of the causes of tire trouble. It commences with a series of folders illustrating the more common mistakes in the treatment of tires. A careful study of these folders will save many repairs bills, and merit the heartiest thanks of the tire user.

Folder No. 1 illustrates cuts on the tire tread evidently made by a chain which was fastened to the spokes of the wheel. This was thus held tightly in one place as the cutting appears at regular intervals, illustrating the point that the least injury results from chains being loosely applied so that play is allowed to work themselves around the tire, distributing the strain to all points alike.

Folder No. 2 shows a tire forced out of shape, caused by the wheels being out of alignment. This usually occurs on the front wheels, and generally affects both tires alike. Improper adjustments of the steering apparatus or a bent axle or knuckle are responsible.

Folder No. 3 represents a flat, out-of-shape appearance, caused by not properly inflating the tire. This produces loosening of the tread from the fabric; also rim cutting.

Folder No. 4 represents a tire blistered by the neglect of small cuts extending to the fabric.

Folder No. 5 represents a large break in the fabric, caused by the wheel passing over stones, but leaving not the slightest mark on the outside of the case.

Folder No. 6 represents a tire that is "rut-worn." This does not necessarily imply that this condition is due only to ruts, but it is frequently caused by running in deep wheel tracks. The same condition results if the tire is run on muddy roads on a frozen crust insufficiently strong to support the car; also running against curbstones.

Folder No. 7 represents a small cut in the tread. An inside patch was applied by the owner to place the tire in good running order, but instead, the patch acts as a wedge, causing the fabric to part, thus causing a break from bead to bead.

* * *

The Goodyear Tire & Rubber Company is preparing a storage lake in East Akron as a source of wafer supply for their factory. It is fed by the Little Cuyahoga River, which drains Springfield and Fritch's Lakes, and a watershed of 100 square miles. The lake will cover more than eighteen acres. This provision on the part of this company will take care of the future growth of the plant which is being greatly enlarged.

Work will shortly be commenced on a new building for the Goodyear Tire and Rubber Co., Akron, Ohio. It will be 300 feet in length, an addition to the tire manufacturing department. That this considerable addition to the company's facilities is urgently needed is proved by the fact that although working 24 hours a day and turning out daily 2,200 tires, or enough to equip 550 automobiles, the company is weeks behind with its orders. Last year the sales of Goodyear tires suddenly mounted to \$8,500,000, having trebled in a single year; this year they are expected to reach \$12,000,000.

* * *

Each of the big rubber companies in Akron is a consumer of a large amount of water, using almost as much as many cities of 20,000 or 30,000 population. The Akron Water Works Company recently had a break in its pipes, which made it necessary to shut down the whole plant for repairs. The question arose, What would the city do for a supply? and this created a great deal of apprehension among the citizens of Akron. Mr. H. S. Firestone, president of The Firestone Tire & Rubber Company, immediately upon securing this knowledge, placed at the disposal of the citizens the private pipe line of his company, through

which water is brought from a lake some distance away for the purpose of operating the large turbine engines lately installed in the new Firestone plant in South Akron. Thus, in addition to carrying the load necessary for The Firestone Tire & Rubber Company, the emergency pumps of this plant, night and day, supplied Akron with fire protection and drinking water. This was done unsolicited and at the expense of The Firestone Tire & Rubber Company, and more, Mr. Firestone says that they (the City of Akron) can use it as long as they need it.

* * *

James A. Braden, advertising manager of The Diamond Rubber Company, and a careful student of economics as well as a keen analytic and constructive advertiser, says on the subject of scientific management, especially as it affects The Diamond Rubber Company: "There are two ways of looking at scientific management, one, by which the factory derives results, and that by which the employes benefit. Why is it that some factories are able to turn out much better goods than their competitors? Take, for instance, the rubber shops. All can buy rubber for the same price and cotton, for the fabric, costs one as much as the other. What makes the difference in the finished product? Scientific management. Manufacturers all over the country have been paying special attention to this for the past few years. As far as my limited experience has shown, brains count for much in the Diamond. Nearly all the men who are now holding high positions in this company rose from the ranks, beginning as office boy or working at minor positions in the factory proper. This shows that an eye is kept on the work of the men in the factory, and they are advanced as rapidly as is permitted. Ten years ago, no one would have thought of making alterations in the building to provide for the health or comfort of the employes. It is one of the greatest points, from an architect's view today, to make provision for plenty of light, and good ventilation. All of the Diamond buildings are built from a sanitary standpoint, the company having discovered that with plenty of light and pure air, a man can work better than when he is shut off from the light and compelled to inhale close and heavy air all day long.

"Another feature which has been added under the scientific management system is the hospital. When I came to the factory it was the custom, if an employe got a hand or leg cut off, to send for the ambulance and, after a half-hour's wait, to take him to the hospital. Now, every time a finger is smashed or an employe feels in the least bit sick, he is taken to the hospital and put under a doctor's care. There is one trained nurse at the hospital all the time, two part of the time, and two doctors always within reach.

"It may be that officials of The Diamond Company are too lax with their employes, as they are allowed to talk while working, and are given much more freedom than men in most other factories; but we find that by giving them a little freedom they work a little harder when they do work and get out as much as if they were compelled to stay on the job all the time.

"I don't know whether it would be called scientific management or not, but by watching for the comforts and needs of all our employes and trying to work with them as individuals instead of a body of 5,000 laborers, we are making the Diamond grow every day, and by treating our employes in a broad way, overlooking their petty faults, as are benefiting themselves and us.

"More technical ideas of 'scientific management' are being applied at the Diamond, too, such as arranging seats at work benches so not a move of the worker is lost. In one room the saving to the company last year was \$10,000. Employes who come up to the standard set get a bonus in wages."

* * *

Francis E. Holton, cheerful, energetic, active, eighty, the youngest old man in the rubber sundry and specialty business, the possessor of the one-millionth patent says: "There is no

news about rubber that I am not interested in. Ever since I started in the rubber industry with my wife as a partner, I have lived on the study of it." He attributes the wonderful growth of the rubber industry of late years largely to the advent of the gasoline engine, this making possible the automobile, and the automobile in turn calling for rubber tires.

Mr. Holton, no doubt, is the oldest rubber student of The American Rubber University. Although an octogenarian, his step is steady, his eye penetrating, his mind clear, analytical, logical and constructive, his chief aims being the advancement of the science for which he has given almost a lifetime of effort.

* * *

A welcome indication of prosperity at Akron and in Summit County generally is afforded by the fact that more than three weeks elapsed without any petition in bankruptcy from either quarter being filed with the Akron official referee.

LARGE EXTENSION OF REPUBLIC PLANT.

At a recent meeting of the Board various important additions to the works of the Republic Rubber Company, Youngstown, Ohio, were decided upon. These include enlargement of the power plant and mill-room capacity. In connection with the two new buildings just completed the improvements will allow of a largely augmented product, while the working staff will be increased from 1,000 to 1,500 hands.

A PRIZE-WINNING STABLE.

AMONG the most admired equines at the recent Chagrin Valley Hunt Club Show were three "blue ribbon" stars—Dundermiller, Wild Irish Rose and Lochinvar—from the stable of W. B. Miller, secretary of the Diamond Rubber Company, Akron. The first-named entry took the prize on that occasion in the heavyweight hunter class.

THE CREATION OF THE FIRESTONE COMPANY.

HARVEY S. FIRESTONE, president and general manager of The Firestone Tire & Rubber Company, is a capable president, an efficient manager and a constructive engineer of marked ability. He was born in Columbiana County, Ohio, December 20, 1878, of sturdy pioneer stock who had lived in this country more than a century and had taken not only an active part in political and commercial lines, but had helped shoulder the burdens of the moral and military conflicts of this nation commencing with the French and Indian wars.

Endowed with physical strength and stamina, given the advantage of the schools of his home, and supplemented with a first-class commercial education, in 1888 he started as a book-keeper in a coal office. After mastering the details of this business, and desiring to broaden his business education, he became a traveling salesman for a drug and grocery specialty house. In 1894 he entered the employ of The Columbus Buggy Company. He soon became convinced that there was a broad field for development in rubber tires for various vehicles. Acting on this conviction he resolved to devote his entire efforts to the development of this industry.

He at once commenced to exploit rubber tires for buggies, and in 1894 drove the first rubber tired buggy in Michigan. The next two years he spent in Detroit demonstrating to various owners of iron tired vehicles the advantage of using rubber tires. In 1896, realizing that there was more business in Chicago than in Detroit, he went there and with a capital of less than one thousand dollars organized The Firestone Rubber Tire Company.

The first few years Mr. Firestone gave almost his entire time to the sales end of the business, having his tires manufactured by contract. Then he and his associates, having bought out The Imperial Rubber Tire Company of Chicago, consolidated with The Rubber Tire Wheel Company, of Springfield, Ohio. This consolidation was supposed to control the rubber tire business at that time. Mr. Firestone and his associates sold their rights

to New York parties, who later formed The Consolidated Rubber Tire Company of New York. He remained in Chicago as general manager of that company until August, 1899, when he came to Akron, Ohio.

In August, 1900 he organized the present Firestone Tire & Rubber Company, which was incorporated for \$50,000 for the purpose of making carriage tires of the side wire type, of which Mr. Firestone owned the original patents. In 1903 The Firestone Tire & Rubber Company bought an old foundry in East



HARVEY S. FIRESTONE,
President Firestone Tire & Rubber Company.

Miller avenue, and commenced to manufacture their own tires. The number of tires manufactured increased until the summer of 1910 the 3½ acres of floor space was completely outgrown; the company had no room to increase their output, as the plant was running day and night. The company immediately commenced to construct a new plant of latest design, construction, machinery and equipment covering a floor space of over ten acres, which was completed in May of this year.

RIGHT TO THE POINT.

We are requested to publish the following, a communication addressed to the members of the Rubber Section of the American Chemical Society:

"The American Chemical Society is very anxious that those of its members interested in the chemistry of India rubber should have their problems considered and solved. The India Rubber Section has had two meetings, but there is not yet sufficient evidence of real co-operative effort among the rubber chemists to insure success. The methods of analysis of India rubber are in almost a chaotic condition. The usual specifications for rubber goods meet the approval only of those who make them. The general chemistry of India rubber is sadly in need of improvement.

"Only the chemists actively interested in the India rubber industry can hope to improve affairs, and it is, accordingly, necessary that they should really get together without too many padlocks on their lips if results are to be accomplished. It is certainly true that there are many secrets of the rubber trade which cannot be disclosed, nor is there any desire that they should be disclosed, but when certain firms decline even to allow their methods of analysis to be known, it would certainly seem that secrecy is carried too far. The Section can never become a success if every member goes to its meetings with no idea of his responsibilities toward helpfulness, but simply to learn from others, many of whom may be in a similar position."

THE RUBBER TRADE IN SAN FRANCISCO.

THE rubber business in and about San Francisco is not very lively, but there is a fair degree of activity, and it appears that there is more business from this territory than through the northern districts in the neighborhood of Seattle, Washington, and Portland, Oregon. Business in the northern sections has been hampered, owing to the fact that the mills are not running very extensively. Taking California as a whole, the yield of all products, both of the farms and of the mines, is very large this season, and prices are good, so that a season of prosperity is unquestionably at hand. Then, too, the World's Fair proposition lends more life to the local trade and everything is favorable to a prosperous year.

The lack of demand just now, however, keeps the market quiet, and prices in many things are held at a figure too low in comparison with other commodities. A representative from an eastern house was surprised at the low prices which are being asked here for belting. He said that his house is getting a better price wholesale in export centers like British Columbia, India and other far-away places, than the retailers in San Francisco are getting for the same class of goods.

* * *

Ethelbert Milburn has come out from New York to take the management of the new Pacific Coast branch of the Seamless Rubber Company of New York. This line was formerly carried as an agency by the local rubber house of The Squires & Byrne Company. The Seamless company, finding that all of the other manufacturers were establishing direct branches on the Pacific Coast, and their business here continually growing, concluded to do likewise. The offices and salesrooms will be maintained in the same location at 565-567 Mission street.

* * *

An action has been commenced against the directors of the defunct Barton Packing & Rubber Company, by the firm's creditors, among whom S. S. Jones & Company, on California street, dealers in crude rubber, are the most deeply involved. W. B. Dunning and four of the Bartons are made defendants as directors, and all are charged with a liability of \$12,250. The Barton Packing & Rubber Company failed last May and the assets of the firm were then assigned for the benefit of the creditors. The complaint alleges that the sum of \$12,215 was held out wrongfully, at the time of the settlement. The Jones Company alleges that there was \$17,086 due to them for goods purchased, and that all they received in the settlement was \$8,651.

* * *

Mr. Hirsch, representing the Pennsylvania Rubber Company, has returned from his northern trip. During part of the trip he was on the sick list and spent two weeks in a hospital in Spokane.

* * *

R. H. Pease, president of the Goodyear Rubber Company, has returned from Portland, Oregon, where he took his family by automobile a distance of 750 miles. He became much interested in the matter of public roads, and states that with a little attention, they can be made very comfortable and beautiful. California has appropriated \$18,000,000 for the purpose of building state roads, and within the next few years we expect to have more and better automobile roads than perhaps any other state in the union. Mr. Pease states that business generally is dull in comparison to what is expected at this time of year, although in San Francisco it is running ahead of last year. But in Portland, and also Seattle, on account of the mills being shut down, business is quiet. In regard to the boot and shoe business, everybody is waiting. As there is no discount of 5 per cent this year as a premium to purchase made prior to July 1, there was very little advance ordering.

Mr. Cook, one of the managers of the B. F. Goodrich Company, states that business is improving every day. He says that indications are very favorable for a big garden hose business for the coming year. The dealers are buying earlier than ever.

* * *

Mr. Kerr, representing the Shultz Belting Company, of St. Louis, is in San Francisco on business in connection with the firm.

* * *

Business with The Squires & Byrne Company is increasing and they have found it necessary to increase their space by adding a mezzanine floor to the main floor at their store on Mission street. Mr. Squires has gone down to Los Angeles to take charge of the firm's branch there, as Mr. Cooley, their agent, is no longer with them. The Los Angeles branch is doing well and the firm intends to look after it carefully. Mr. Squires will remain there for a while and then he will alternate with Mr. Byrne, who will take charge for a few months, and so on, alternating back and forth.

* * *

George Dodge, of the Western Belting & Hose Company, on Mission street, will go to New York about the first of the year to manage the Mineralized Rubber Company's business in that city. Nathan Dodge, who has been managing the New York business, will come to the coast to spend the winter. He will arrive some time in October. Business with the local firm is reported as being very good.

* * *

S. E. Abramson has been selected to take the management of the Los Angeles branch of the Gorham-Revere Rubber Company, at 1237 South Olive street. Mr. Wiese has charge of the automobile tire end of the business at that point.

* * *

Robert McNeilly has just returned to headquarters with B. F. Goodrich Company, from his honeymoon trip to the eastern trade centers. Harry Miller, one of the managers, has also returned from the east.

* * *

For the sake of uniformity throughout the coast, the names of the Washington Rubber Company has been changed, both at Spokane and Tacoma, Washington, so that those branches now are each called the Gorham-Revere Rubber Company.

* * *

Mr. Joseph V. Selby, representing the Boston Woven Hose & Rubber Company, reports that the fall trade conditions are looking very favorable.

* * *

The Golden Gate Tire Company has leased the new building, which is being constructed for it on the corner of Van Ness and Elm avenues.

* * *

The Keaton Vulcanizing Works has incorporated with a capital stock of \$50,000. R. D. Sweeney, R. H. and George Keaton are the directors. They manufacture especially the Keaton non-skid tread.

* * *

Sakutaro Nakano has filed suit against the Bowers Rubber Works for \$10,000. He was struck by a truck last March, which was owned by the Bowers Rubber Works. He alleges that five of his ribs were broken.

Every twenty-four hours the United States Tire Company's Hartford (Connecticut) plant turns out complete over 1,000 automobile tires, 1,000 inner tubes, 2,000 bicycle tires and 100 solid motor truck tires. The output of the four other branches — the Morgan & Wright, G & J Tire Co., and the two Continental Caoutchouc factories—is fully as great.

THE RUBBER INDUSTRY IN RHODE ISLAND.

(Special Correspondence.)

DURING the month of August the rubber industry in Rhode Island has improved somewhat over that of July, some of the larger plants which closed in the middle of July having opened again, either wholly or in some departments, while some of the independent manufacturers have sufficient orders on hand to warrant them in running on full time schedules. Dullness in the trade was felt chiefly at the Woonsocket and Bristol plants of the United States Rubber Company, but these have now reopened and that no further curtailment is contemplated.

* * *

The United States Tire Company, which has just completed large additions, doubling the size of its plant on Valley street and the banks of the Woonasquatucket river, is one of Providence's fastest growing manufacturing concerns. The company, a branch of the United States Rubber Company, came here about a



NEW MACHINE AND CARPENTER SHOP OF UNITED STATES TIRE CO. PROVIDENCE, R. I.

year ago, and purchasing the old plant of the Joseph Ranigan Rubber Company, has added new structures until now it has 12 buildings altogether, and furthermore has plenty of land nearby upon which it can expand as the business grows.

Among the more notable changes just finished at the local plant are a four-story brick storehouse, 260 x 60 feet, used to store finished product and raw material, and a two-story machine and carpentry shop, 125 x 60 feet, with an ell of one story. Besides these a three-story addition has been erected to one of the mills and a new power house, a press room, a moulding room and a one-story addition to the main mill have been built in the past few months, being now complete and in use. All the new buildings, like the old, are of heavy brick construction.

The principal product of the concern is automobile tires, and while at present 500 of these are being turned out every day, it is planned to largely increase the output shortly. 600 hands are employed and the factory is being operated day and night.

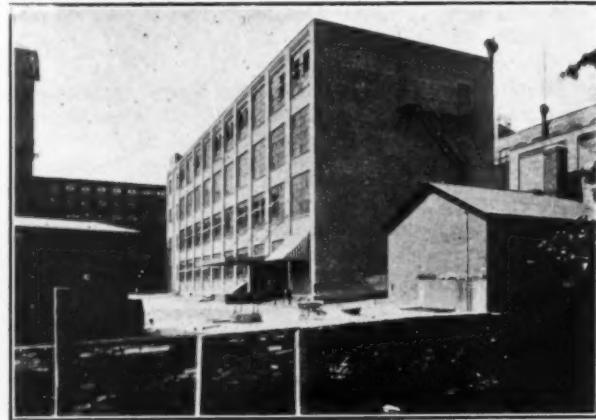
The company requires a higher class of skilled help than is necessary in some other branches of rubber manufacture, and has experienced some difficulty in obtaining the kind of help it seeks. But those now employed by the company seem to be satisfactory workmen, having been secured from this section, and more hands are being put to work every day, as rapidly as they can be found. It is the company's plan to divide the help into two shifts each of which will contain both experienced and less experienced workmen. One of these divisions works nights and the other days, and each will be filled in as rapidly as possible in order that the entire capacity of the plant may be utilized.

The two factories of the Woonsocket Rubber Company at Woonsocket, the Alice and Millville Mills, are now running at full time again, following a shutdown of one month, begun on July 15. Altogether 2,300 people are employed, 1,500 at the first named mill and 800 at the second.

* * *

President Charles D. Davol, of the Davol Rubber Company, of Providence, stated recently that business conditions with the firm are excellent at the present time, the 750 hands being employed on a full time schedule day. An addition to the plant is in process of erection, being two stories in height and designed to further increase the vulcanizing department. When completed four new vulcanizers are to be installed, two for hard and two for soft rubber.

The general appearance of the plant of the Davol Rubber Company has been changed somewhat recently owing to the widening of Eddy street by the city. A long row of tenement houses, between Point and South streets have been torn down,



NEW STOREHOUSE FOR UNITED STATES TIRE CO. AT PROVIDENCE, R. I.

and this not only gives a clear view of the large factories from the street, but affords room for the company to erect an addition to its property. This addition, Mr. Davol states, is contemplated, but probably will not be made this year.

* * *

Former Governor Augustus O. Bourn, of the Bourn Rubber Company, this city, states that business is booming with this concern and that all departments are running on full time, giving employment to between 400 and 500 people. It is not the practice of this company to shut down at all during the year for vacations or repairs, such repairs as have to be made being done while the plant is in operation or over night. Governor Bourn, after many years in public and private life, is still in good health and in his office daily.

* * *

A. T. Baldwin, of the Walpole Rubber Company, of Walpole, Massachusetts, said recently that the plans of this company for building a branch in Providence have not yet been completed and that it has not been decided what sort of goods the company will manufacture here, if it builds upon land recently acquired on Harris avenue.

* * *

Harry H. Shepard, formerly representative of the National India Rubber Company, has invented and is just placing on the market the Shepard Air Cushion Typewriter Key Cap, which, as he says, "Means less muscle fag for the operator." The cap is a very simple affair, made of fine quality rubber, moulded in one piece, containing no metal parts, equipped with a pneumatic cushion and an inlaid letter.

The United States patent on Mr. Shepard's invention was secured in September, 1910, and the Canadian patent in March, 1911, and, as far as he knows, there is only one other similar key on the market. He is manufacturing them in Providence, where he is also doing a commission rubber business.

The shutdown of the whole factory of the National India Rubber Company at Bristol, which threw some 1,600 hands out of work, did not continue as long as was generally expected. The entire plant was closed for two weeks, beginning on July 15; on July 31 three departments—wire insulating, mechanical fabric and druggists' sundries—were opened, giving employment to about 400. It is now announced that the departments at present idle will start up at once. By that time it is expected that the entire 1,600 or more hands will then be at work again.

The International Rubber Company, at West Barrington, is extending its equipment in various ways, and its shops are now said to be fully fitted for the curing of manufactured goods, principally sheeting. Superintendent Newell is having orders filled rapidly. A new departure is the printing of cotton cloth, a machine for this purpose having recently been installed. It is stated that should the scheme prove to be successful, other machines may be installed later.

Charles O. F. Thompson, who until recently was employed by the National India Rubber Company at Bristol, has removed his family from that town to Trenton, New Jersey, where he is now employed by the Thermoid Rubber Company of that city.

Health Officer Thomas E. Robbins, of Barrington, is investigating the conditions surrounding the disposal of sewage at the plant of the International Rubber Company. Similar investigations are being made with regard to other concerns in that town. A modern filtration plant which will care for the sewage of the several concerns has been suggested.

The Consumers' Rubber Company, at Bristol, is now transferring its raw material and manufactured product between its plant and the railroad station by means of large motor trucks. In this manner it is possible to accomplish the work in one half the time required by horses. Large shipments of footwear are now being made from their factory. It is stated, however, that the wire insulation business of this concern is not as brisk as it was at the first of the year.

E. S. Huxley, for the past ten months assistant general manager and sales agent of the National India Rubber Company, resigned that position recently to accept one of a similar nature in New York City.

Miss Caroline Hanger, head of the pay office of the National India Rubber Company, has resigned her position. She has been employed by the company for the past 18 years.

Rubber companies doing business in this State, whether incorporated under the laws of Rhode Island or not, will have to pay a tax to the State if the recently drafted tax bill becomes law. This measure provides, among other things, for a State tax on the excess valuation of corporate property, applicable to all corporations generally, at the rate of 30 cents on each \$100. Rhode Island's net revenue will be increased by more than \$600,000 if this bill is passed at a special session of the Legislature which may be called by the Governor within a short time.

RUBBER IN THE 1912 CONGRESS OF APPLIED CHEMISTRY.

In accordance with the resolution adopted in London at the 1909 International Congress of Applied Chemistry the 1912 Congress will take place in the United States. The opening meeting will be held at Washington on September 4, next year, while the other meetings, both business and scientific, will take place in New York, beginning September 6 and ending September 13, 1912. The honorary president will be Dr. Ernest W. Morley, of West Hartford, Connecticut; the acting president being Dr. William H. Nichols, of New York. There will be 24 sections and sub-sections.

"India Rubber and other Plastics" four sections, the following comprising the Executive Committee and Sectional Committee:

EXECUTIVE COMMITTEE.

President—L. H. BAEKELAND, Sc. D., Yonkers, New York.

Vice-President—C. C. GOODRICH, 25 Broad street, New York.

Secretary—JASPER E. CUANE, M. S., The Arlington Company, Arlington, New Jersey.

HAROLD VAN DER LINDE, Ph. D., 111 Broadway, New York.

D. SPENCE, Ph. D., The Diamond Rubber Company, Akron, Ohio.

Business address of Section Vb.: Yonkers, New York.

SECTIONAL COMMITTEE OF SECTION Vb.

INDIA RUBBER AND OTHER PLASTICS.

J. W. AINSWORTH, Thomas A. Edison, Inc., and Condensite Company, East Orange, New Jersey.

W. C. GEAR, Ph. D., B. F. Goodrich Company, Akron, Ohio.

BYRON B. GOLDSMITH, American Lead Pencil Company, Hoboken, New Jersey.

CLARENCE M. JOYCE, S. B., Arlington Company, Arlington, New Jersey.

GEORGE OENSLAGER, A. M., The Diamond Rubber Company, Akron, Ohio.

ROBERT C. SCHUEFFHAUS, Ph. D., 175 Pearl street, New York.

FRANK VANDERPOOL, Ph. D., 175 Park avenue, Orange, New Jersey.

THEODORE WHITTELSEY, Ph. D., Rubber Regenerating Company, Mishawaka, Indiana.

EDWARD C. WORDEN, M. A., Clark Thread Company, Newark, New Jersey.

And the Sectional Executive Committee.

TOPICS OF RUBBER SECTION.

The topics of Section Vb. will include:

1. The chemistry of the production and utilization of rubber gutta percha and substances having allied uses.
2. Plastic cellulose compounds, or compounds containing esters of cellulose; as for instance, its nitrates, acetates, etc.
3. Synthetic and resinous plastics.
4. Casein and gelatine plastics.
5. Linoleum, oil cloth, artificial leather, artificial silk and films for photographic and other purposes.

This triennial International Congress is one of the most notable and important technical gatherings of a periodical nature. It will be noticed that the scope of discussion in the India rubber section is sufficiently wide to cover the various chemical questions now occupying the attention of the industry. As the attendance of many leading European scientists is looked for the meetings of the India Rubber Section will practically be another "International Rubber Congress." It is therefore to be hoped that the various chemical questions so ably treated at the recent London Congress will be again brought forward and discussed with a view to their early solution. The opportunity could be still further utilized if arrangements were made for the chemical exhibits representing the processes of rubber cultivation and manufacture being shown here in connection with next year's Chemical Congress.

The "Akron" Dirigible Balloon.

FOR the first time in history, America has produced a dirigible balloon of the first class. From bow to stern the "Akron," in which Melvin Vaniman will essay to cross the Atlantic ocean some time in October, is a home product, and whether or not the expedition meets with success, the fact will remain that this country has produced what is in many ways the most complete ship of the air ever built.

With a total length of 268 feet, the "Akron" measures about 30 feet longer than the "America," which Walter Wellman built for his polar expedition and in which he later tried to fly across the Atlantic ocean. This latter craft, however, was "Ameri-

face to keep it in shape. With the framework, engines, fuel tank and other equipment attached, the "Akron" has a net lifting power of 12,000 pounds. This means that it could carry eighty people, including the crew.

For very obvious reasons, Mr. Vaniman is not ready to start a trans-Atlantic passenger airship line just yet, and on its initial trip over the briny deep it will carry but six men. The rest of the weight will be taken up mostly by gasoline and provisions.

The heavy fabric, of which most of the big gas plant is made and on which the fate of the expedition and the life of every member of the crew will literally hang, was made at the plant



GAS-BAG OF THE SEIBERLING-VANIMAN BALLOON, "AKRON."

can" in name only, for it not only was assembled abroad, but practically all of its equipment was of European manufacture. But especially in the last three years has this country been "catching up" with Europe in affairs aeronautic, and both Mr. Vaniman and Mr. Frank A. Seiberling, who is financing the venture, have seen to it that this new dirigible is representative of the country in which it was built.

While not so large as some of the numerous Zeppelin ships, the huge gas bag now at Atlantic City has a lifting power greater than any ever before constructed, it being capable of sustaining 26,000 pounds in addition to its own weight. The reason of this is that airships of the Zeppelin type are built with a metal frame to keep them rigid, which necessarily adds weight, while the airship in question is so made that the internal pressure of the gas will suf-

of the Goodyear Tire & Rubber Company, in Akron, Ohio, on special machinery. It is composed of three layers of the finest cotton cloth and four layers of the purest Pará rubber and is .03 of an inch thick.

In the early days of ballooning it was supposed that nothing could surpass silk as a balloon material, but years of costly experimenting have proven that it is inferior to cotton. In the first place, cotton is the more fibrous and the rubber, in consequence, adheres closer to it, making a gas-tight fabric. Cotton also lasts longer than silk, the latter showing a proneness to crack and split.

After coating a single strip of the cotton cloth on both sides with a special rubber compound, the "Akron" fabric was built up by taking three such layers and cementing them together.

This was then given another coat of pure rubber and then vulcanized. The strips of the finished fabric were about a yard wide and more than 2,200 pieces were used in the construction of the bag.

The seams are all double, machine sewed, and test out a little better than 100 per cent, both as to strength and leakage. This means that the seam is even stronger than the rest of the envelope. They were made gas-tight by cementing a very thin strip of rubberized fabric on both sides.

As the entire weight of the car is attached to the envelope at the sides, the fabric on the upper half of the bag had to be especially strong. That on the under side, which only has to support the pressure of the gas, which is very slight, is made of two layers of cotton cloth and three layers of rubber.

Of course every detail of the construction of the envelope was watched most carefully and not a penny of labor or expense was spared to make it perfect. Nevertheless, it was built in less than half the time ever given to a similar work. The first designing was done May 1 and the construction began just a month later.

He is a son of John F. Seiberling, the first man to invent a reaper, which both cut the grain and garnered it ready for binding, and who shared with McCormick the honor of making the modern reaper possible. Having been closely associated with his father, Mr. Seiberling also took up the development of these machines and invented a "knotter," which tied the grain in bundles with a bow knot. With his parents he moved to Akron in the seventies and soon became interested in the rubber industry. Among other things, he invented a quick-detachable tire, and he is one of the prominent figures of the rubber world.

Melvin Vaniman is a native of Illinois and was at one time a stationary engineer in the town of Paris in that State, but for a score of years he has traveled over Europe and America in the interests of flying machines. In the early days when any man that talked seriously of such a device was scoffed at, he and Frank S. Lahm built a tri-plane in France, which did much to further the science of aviation. Almost ten years ago he became connected with the Wellman expedition and was chief engineer on all of the unfortunate voyages of the "America."



FRANK A. SEIBERLING.



MELVIN VANIMAN.

Eight weeks later it was loaded in the train and shipped to Atlantic City—a record that will probably stand for many years. The reason this was possible was that the work was done in the fully-equipped Goodyear factory, where large, well-lighted workrooms and expert labor were available.

The envelope alone weighs 4,400 pounds, and it has a capacity of 375,000 cubic feet. It is of the approved cigar-shape, with the extreme diameter 45 feet a quarter of the way back from the bow. This method of tapering the bag toward the stern allows for a minimum amount of air-resistance. The outer coating is yellow, not as might be supposed to make it conspicuous, but to protect the inner rubber coats from the ultra-violet rays of sunlight. These rays have been found injurious to rubber, but in passing through a yellow medium their chemical composition is changed so that they become harmless.

As an inventor and a man of affairs, Mr. Frank A. Seiberling has long been interested in aeronautics and aviation, and when, after the failure of the Wellman expedition, Mr. Vaniman broached the subject of another such venture to him the engineer found a ready listener. Mr. Seiberling is president of The Chamber of Commerce, of Akron, president of The Goodyear Tire & Rubber Company, and has a number of traction and other business interests.

Undaunted by his dip in the Atlantic last year, he no more than set foot on shore than he began to plan another ship, this one to be made wholly after his own ideas. The loss of the "America" served to prove that an equilibrator, dragging like a long tail over the waves, was a poor device to keep a dirigible at a uniform height. Mr. Vaniman expects to accomplish this by means of a balloonet inside the gas bag of the "Akron," the balloonet to be filled with or emptied of air as becomes necessary.

But whatever happens to the dauntless half-dozen souls after they see the outlines of Atlantic City fade into the west and look down to see only the waves beneath them and the clouds around them, they will nevertheless live in history as pioneers in a limitless field. Mr. Vaniman says they will get safely and quickly across—and he has studied the proposition more than anybody else and ought to know.

GOVERNMENT REFLECTION ON WHITE RUBBER RINGS.

ACCORDING to a statement of the Washington Agricultural Department in its *Farmers' Bulletin*, vegetables often spoil after being sterilized, because of defective fruit jar rings. It is poor economy to buy cheap rubbers or to use them a second time. Black rubbers, it is added, are more durable than white ones. This last statement seems open to question.

DEMOUNTABLE, DISMOUNTABLE, DETACHABLE AND REMOVABLE RIMS.

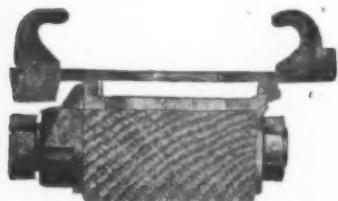
SOMETHING that would eliminate altogether, or at least greatly reduce the hard labor and mechanical complications incidental to tire troubles on the road, has been the dream of the builder and user of the automobile ever since it came into general use. A large proportion of the inventions that relate to self-propelled vehicles, are in some way connected with tires and many have to do with removable rims.

The objects aimed at by the designers of removable rims, in addition to compactness and light weight, have been simplicity of

ization apparent at an early stage, and the Standard Rim Co., of Akron, Ohio, was one of the fruits of this need.

Although tire manufacturers generally had long recognized the necessity for standardization not one of them controlled sufficient patents to produce a rim that would interchangeably take all makes of both straight and clincher tires and at the same time provide for quick detaching and demounting. Various ideas were followed up, but it was found that none of them were practicable without including some of the technical or mechanical principles embodied in other rims which were covered by patents.

Finally certain important tire manufacturers who had been responsible for a large proportion of the rims heretofore made,



Type 1—For all Straight Side and Clincher Tires. (Clamp Locked.)



Type 2—For all Straight Side and Clincher Tires. (Clamp Unlocked.)



Type 3—For all Clincher Tires (Wedge in Position).

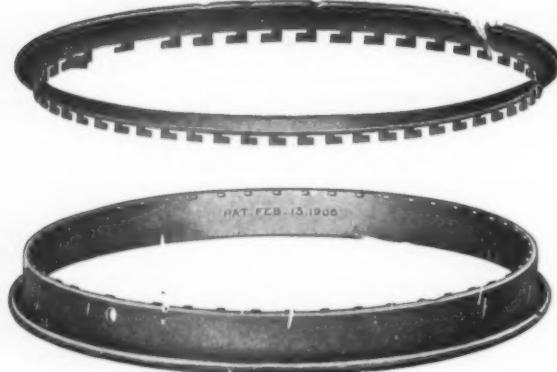


Type 3—For all Straight Side Tires (Wedge in Position).

UNITED RIM CO., DEMOUNTABLE, DETACHABLE.



FIRESTONE QUICK DETACHABLE CLINCHER.



CONTINENTAL DEMOUNTABLE RIM AND TOOL.



DIAMOND DEMOUNTABLE.

construction, small number and simplicity of parts, ease of removal, including freedom from liability to rust or stick fast, if left for long undisturbed, and reasonable first cost. These advantages are naturally claimed indiscriminately by all manufacturers of remountable rims.

Hundreds of rims have been invented during the past few years, but for some time they failed to appeal to the motorist, who manifested a leaning towards the quick detachable tire types. Ultimately, however, the labor and delay involved in pumping up tires on the road brought the remountable into its own and it is coming more and more into use. In the following it is not the intention to even enumerate all the rims on the market, but to briefly mention the types best known and in commonest use.

The many types of rims made the desirability of their standard-

transferred to the United Rim Company, all of their rim patents, together with engineering data and other information that would render possible the establishment of a uniform standard. By eliminating all features of negative value that prevent interchangeability and making the rims conform at the same time to the best of established engineering principles, the standardization thus effected resulted in the adoption of three rims. They fit all straight side and clincher tires and also embody efficient means for detaching the tire from the rim and for demounting the rim from the wheel. As adopted, these rims embody the good points of the Goodyear, Diamond (Marsh), Continental (Gilbert), and Goodrich types, with the addition of such new features as have been demonstrated to be of value.

The Continental "A. D." Demountable Rim (Gilbert type) is

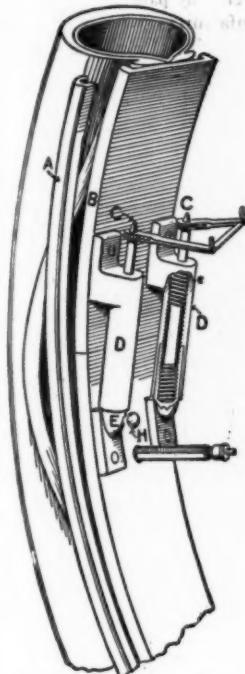
adapted for clincher, quick detachable and Dunlop tires. The removal of the rim is effected by extracting four of the eight wedges that secure it, and inserting a hinged tool.

The Diamond Demountable rim is secured to the wheel by five bolts passing through the felloes. On removing these bolts and the two nuts from the reinforcement strip where the felloe is recessed to admit the valve stem, by means of a brace and socket wrench, the rim can be easily slipped off the wheel.

The Goodyear Tire & Rubber Co.'s (Doolittle) rim has an

clamping ring, demountable rim nut, demountable rim clamp, demountable rim clamp bracket, demountable rim bolt, demountable rim felloe band. It is a solid and not "split" rim.

The Fisk Removable Rim, comprises wheel rim, tire rim and expanding rim and securing bolts. The wheel rim is shrunk on to the wheel felloe in the regular way. It is fitted with a hole into which a dowel pin on the tire rim fits to prevent creeping. The tire rim is made with a hollow centre to ensure lightness and good bearing for the expanding ring. The expanding ring



GOODYEAR DOOLITTLE RIM.



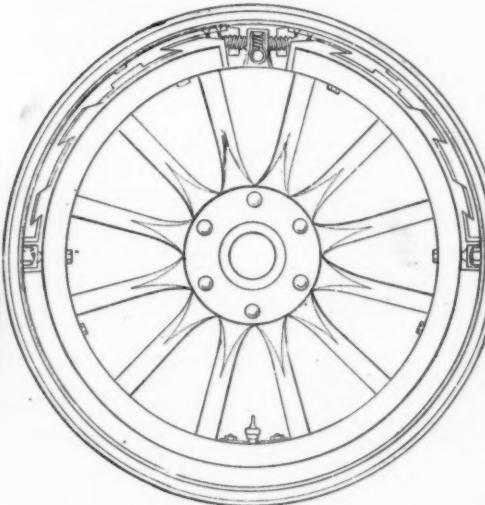
FISK REMOVABLE RIM.



DORIAN REMOVABLE RIM.



REPUBLIC RIM.



HOWARD QUICK DEMOUNTABLE.



MICHELIN DEMOUNTABLE.

expansible base, side flanges, contracting and expanding screws, telescoping housings, etc. It is worked by a simple ratchet wrench.

The Firestone Quick detachable clincher demountable rim, comprises the following parts: Clincher side ring, locking ring,

is beveled on the inside to correspond with the outside bevel of the wheel rim and is operated by means of five nuts, applied to bolts which pass through felloe, wheel rim and expanding ring.

The Republic rim has a locking ring which fits over the turned-down edge of the base-plate and the heel of the removable flange.

A wedge-shaped key-piece is inserted in the split ring and secured by three cap screws.

The Michelin Demountable Rim was one of the earliest to be put to practical use, especially in speed trials. It has eight wedge-bolt nuts on the front of the wheel, which are removed by means of a brace socket wrench. By inserting the thin end of spur lever between the removable rim and the permanent band, near the highest wedge clamp and using slight leverage, the clamp may be removed bodily and the rim taken off.

The Dorian rim is in two halves which are hinged together and can be expanded until the tire is secured. The attachment to the wheel is made by means of wedges. The removal of four of these wedges, each of which is held by a single nut, allows the removal of the rim.

The Howard Quick Demountable Rim has an expandable and contractible rim that holds the tire to the wheel by friction, by lugs that prevent creeping and by lock rivets devised to prevent slipping.

The manufacturers of rims have also turned their attention to the requirements of aviators. The tires used on aeroplanes are so much lighter than the ordinary make and the shocks to which they are subject notably in alighting, so severe, that they are very liable to injury and the wise aviator recognizes the importance of being able to promptly repair such damage.

RUBBER TIRE PROTECTION.

ABRASION against the road surface is the primary cause of rubber tire deterioration; subsequent unfavorable conditions and circumstances—inadequate inflation and consequent rim-cutting, punctures or cuts, bruises, sand or water-blisters, etc.—which complete their destruction, are in most cases only contributory factors, for which hard wear and consequent reduction of rubber substance, has prepared the way.

Under these circumstances it is only to be expected that the efforts of inventors to perfect some device, whereby, without impairment of its resiliency, a tire would be guarded against this destructive wear, should be watched with interest by automobileists, especially where it is found practicable to combine, with such protection, anti-skidding properties.

The means thus far employed for this purpose have varied widely in character and include the hardening, by compounding with different substances and otherwise, of the rubber surface and the distribution over it of studs, corrugations, etc., of harder rubber, the complete covering of the surface exposed to wear with a supplementary leather "shoe" or strip, specially tanned and treated to increase resistance to wear and the effects of moisture, and in some instances vulcanized to a rubber friction fabric or directly to the body of the tire and made either plain or studded with metal bosses. A similar device is made with a rubber, in place of the leather foundation, and some inventors even encase the tread of the tire in an armor of more or less elastic, overlapping plates, closely resembling the "plate mail" worn by knights of old.

As far as their original purpose is concerned, *i. e.*, the protection of the tire against excessive wear or external injury, some of these devices serve their purpose admirably, but almost all those of a removable character are open to objection for one or all of several reasons.

In the first place, they are liable to allow grit and sand to find its way between protector and tire, which, with the almost inevitable friction, be it ever so slight, is disastrous to the rubber surface, or, and this is equally objectionable, they admit water between casing and covering, which, in its effect on the rubber tire, is almost, if not quite as bad. There is also a tendency on the part of some of these protectors to "creep" on the tire, the heat engendered as a result of the consequent friction, especially if moisture be also present, being particularly injurious.

Thus, while in many respects, the separate tire protector has its good points, it cannot be regarded as perfect and motorists are still looking for some device that will protect this, the most expensive item in their equipment.

In the meantime, it cannot be denied, that in the case of most of the applied tire protectors, their weak point is to be sought, not in the protective medium itself, but in the means of securing it in place and it is to the improvement of this feature that the inventor must direct his ingenuity, if he wishes to obtain a satisfactory measure of success.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

THE following is an official statement of the value of exports of manufactures of india-rubber and gutta-percha from the United States, for ten fiscal years, ending June 30:

Years.	Belting, packing and hose.	Boots and shoes.	All rubber.	Total.
1910-11	\$2,163,416	\$2,219,430	\$6,564,402	\$10,947,248
1909-10	1,960,825	1,984,739	5,115,331	9,060,895
1908-09	1,498,445	1,292,673	3,823,956	6,615,074
1907-08	1,347,775	1,614,290	3,743,040	6,705,105
1906-07	1,253,369	1,231,898	3,729,643	6,214,910
1905-06	1,221,159	1,505,082	2,966,144	5,692,385
1904-05	994,100	1,214,342	2,572,375	4,780,817
1903-04	879,476	1,086,364	2,469,750	4,435,590
1902-03	819,985	1,056,491	2,299,875	4,176,351
1901-02	634,146	1,046,315	1,781,941	3,462,402

Exports of rubber boots and shoes (in pairs) have been as follows, by fiscal years ending June 30:

Years.	1902	1907	1908	1909	1910	1911
1902	2,594,708					2,310,420
1903	2,307,401					3,080,253
1904	2,310,808					2,396,435
1905	2,390,539					3,791,084
1906	2,693,670					3,984,312

Exports (in value) of reclaimed rubber and of waste rubber have been as follows:

Years.	Reclaimed.	Waste.
1910-11	\$781,650	\$723,664
1909-10	535,795	578,944
1908-09	414,861	402,897
1907-08	418,738	449,727
1906-07	665,109	548,695
1905-06	511,843	339,507
1904-05	522,902	204,945

IMPORTS INTO THE UNITED STATES.

Years.	1910-11	1909-10	1908-09	1907-08	1906-07	1905-06	1904-05
	\$875,125						
	1,154,347						
	1,391,770						
	1,956,590						
	2,262,783						
	1,992,413						
	1,389,064						
	821,562						
	665,972						
	449,756						
	\$61,283						
	80,567						
	71,819						
	93,545						
	191,064						
	208,172						
	117,735						
	335,480						
	225,198						
	127,780						
	\$936,408						
	1,234,914						
	1,463,589						
	2,050,135						
	2,453,847						
	2,200,585						
	1,506,799						
	1,157,042						
	891,170						
	557,536						

GREAT BRITAIN AND IRELAND.

OFFICIAL statement of exports of manufactures of caoutchouc for the first six months of three years:

	1909.	1910.	1911.
Boots and shoes	£78,742	£86,988	£69,376
All others	755,903	897,199	961,804
Total value	£834,645	£954,187	£1,031,180
In U. S. money	\$4,061,800	\$4,789,546	\$5,018,237

Value of "Apparel" waterproofed by any process—first six months of the year: In 1909, £125,466; in 1910, £221,370, and in 1911, £302,059.

Exports of rubber footwear amounted to 79,814 dozen pairs in 1909; 83,106 dozen pairs in 1910, and 66,521 dozen pairs in 1911.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED JULY 4, 1911.

NO. 996,611. Sprayer. M. D. Buskirk, Paw Paw, Mich.
996,739. Fireman's hood. F. W. Vinton, Weehawken, N. J.
996,796. Protective cover for pneumatic tubes. F. Rosdorff, Potsdam, Germany.
996,836. Surgical appliance. G. A. Conrad, Houghton, Mich.
996,870. Automobile rim-holding and tire-pumping device. E. C. McCullough, Greenwich, Conn.
996,882. Automobile tire pump. J. J. Reddy, Jersey City, N. J.
996,937. Fountain pen. W. R. Mulock, Winnipeg, Manitoba, Canada.
996,970. Rubber-covered roll. I. P. Burnham, Stoughton, Mass., assignor to Stoughton Rubber Co., Boston, Mass.
996,999. Armored hose. J. J. Mulconroy and E. S. Morris, Philadelphia, Pa.
997,033. Sock and like suspender. P. E. Baily, M. A. Vautier and E. C. M. Godard, all of Paris, France.
997,047. Apparatus for removing foreign matter from india-rubber, gutta-percha, balata and the like. Morland M. Dessau, London, England.
997,242. Clothes sprinkler. A. L. Connally, Pittsburgh, Pa.

Trade Marks.

50,309. The Omo Mfg. Co., Middletown, Conn. The word *Omo*. For fancy goods, furnishings and notions.
51,149. Imperial Rubber Co., New York, N. Y. The word *Liberty*. For insulating tapes, paints, etc.
51,150. Imperial Rubber Co., New York, N. Y. The word *Premier*. For insulating tapes, paints, etc.
51,153. Imperial Rubber Co., New York, N. Y. The word *Irc*. For insulating tapes, paints, etc.
51,156. Imperial Rubber Co., New York, N. Y. The word *Challenge*. For insulating tapes, paints, etc.
55,971. The Beacon Falls Rubber Shoe Co., Beacon Falls, Conn. The word *Fisole*. For boots, shoes, etc.

ISSUED JULY 11, 1911.

997,323. Horseshoe pad. C. E. Pearl, Beachmont, Mass.
997,331. Teat for baby soother and pacifiers. F. Schultz, London, England.
997,398. Pneumatic tire. F. A. Macon, Henderson, N. C.
997,443. Pneumatic tire. T. Dunn, London, England.
997,474. Pin protector. W. C. Stuckel, Newark, N. J.
997,487. Horse boot. M. J. Brassell, Cambridge, Mass.
997,633. Hose coupling. J. J. McCarthy, Erie, Pa., assignor of four-tenths to Erie Car Works, Inc.
997,646. Tire armor. A. M. Bruce, Fulton, Mo.
997,668. Vehicle wheel. J. J. Haines, Indianapolis, Ind.
997,687. Pneumatic tire cover. A. J. Michelin, Paris, France.
997,708. Tire. C. T. Schwartz, Philadelphia, Pa.
997,745. Detachable rim flange for the wheels of motor cars and other vehicles. T. E. Bridgeman, Swansea, England.
997,747. Elastic webbing. S. Brown, assignor to the Nashawannuck Mfg. Co., both of Easthampton, Mass.
997,752. Protector for pneumatic tires. E. T. Thweat Clark, Comanche, Okla.
997,855. Hose coupling. F. Robinson, Casey, Ill.
997,853. Vulcanizing device for rubber tires. W. C. Risbridger and M. W. Risbridger, assignors to W. Trostler and S. I. Rose, all of Cleveland, Ohio.
997,877. Tire-carrying rim for vehicle wheels. G. Webb, Monmouth, England.

Trade Marks.

54,404. Rayolite Co., Boston, Mass. The word *Rayolite*. Raw or partly prepared materials.
54,704. Wallach Bros., Ltd., London, England. The word *Evertrustyle*. For belting, hose, machinery packing and non-metallic tires.
55,099. Merchant & Evans, Camden, N. J. For tire receptacles.

ISSUED JULY 18, 1911.

998,042. C. H. Semple, Trenton, N. J. Tire case.
998,127. Tire for vehicles. E. Siegel and M. J. Cantor, N. Y., assignors of fifty-one one hundredths to Jacob Ruppert, Jr., twenty-four and one-half one hundredths to E. Siegel and twenty-four and one-half one hundredths to M. J. Cantor, all of New York, N. Y.
998,148. Surgical instrument. R. A. Bachmann, Newport, R. I.
998,172. Pump for inflating rubber tires. C. A. Haas, St. Louis, Mo.
998,366. Tire chain. V. Mancini, Granville, N. Y.
998,369. Tire cleat. T. J. McKenzie, assignor of one-fourth to T. G. Peck and C. A. Peck, all of Barberston, Ohio.
998,413. Puncture-closing device for pneumatic tires. A. Smith, Stuart, Neb.
998,474. Apparatus for shaping plastic material, such as india-rubber, gutta-percha and the like. M. M. Dessau, London, England.
998,476. Vehicle tire. J. W. Driscoll, Central City, Col.

Trade Marks.

51,152. Imperial Rubber Co., New York, N. Y. The word *Majestic*. For belting, hose, machinery packing, etc.

51,604. The B. F. Goodrich Co., Akron, Ohio. The word *Signal*. For belting, hose, machinery packing, etc.

ISSUED TUESDAY, JULY 25, 1911.

998,666. Demountable rim construction. E. A. Baker, assignor to Rapid Removable Rim Co., both of New York.
998,668. Vehicle wheel tire. J. B. Barnes, Fort Wayne, Ind.
998,753. Tire. G. S. Connor, St. Paul, Minn.
998,803. Hair-washing hood. O. B. Salisbury, New York, N. Y.
998,804. Hair-washing hood. O. B. Salisbury, New York, N. Y.
998,841. Hose coupling for air brakes. N. Clegg, Neodesha, Kan.
998,874. Spray brush. E. M. Crawford, Corozal, Panama.
998,880. Demountable rim. P. E. Doolittle, Toronto, Ontario, Canada.
998,966. Tire for vehicle wheels. S. Heinrich, Differdingen, Germany.
998,977. Water bag. J. A. Murray, assignor of one-half to J. L. Mahoney, both of New Haven, Conn.
998,980. Tire. J. J. Patton, New York, N. Y.
999,010. Ankle support and protector. H. J. Collins, Taunton, Mass.
999,085. Demountable tire rim. B. C. Ball, Portland, Ore.
999,086. Method of forming tire rims. B. C. Ball, Portland, Ore.
999,100. Apparatus for removing foreign matter from india-rubber, gutta-percha, balata and the like. M. M. Dessau, London, England.
999,132. Rain skirt. L. F. Suddick, Dallas, Tex.
999,138. Demountable rim. L. E. Younie, assignor to the O'Gorman-Younie Company, both of Portland, Ore.
999,157. Pneumatic rubber tire. C. E. Eckrode, assignor to J. Ellwood Lee Co., both of Conshohocken, Pa.

Trade Marks.

49,751. The Arlington Co., New York, N. Y. The word *Rubberine*. For fancy goods, furnishings and notions.
54,365. Habirshaw Wire Co., Yonkers and New York, N. Y. For electrical machines and supplies.
54,815. Smyth-Despard Co., Utica, N. Y. The word *True Brand*. For belting, hose, machinery packing and non-metallic tires.
56,591. The Faultless Rubber Co., Ashland, Ohio. The word *Challenge*. For dental, mechanical and surgical appliances.
56,914. Eberhard Faber, New York, N. Y. For rubber erasers.

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 5, 1911.]
5,850 (1910). Tire attachment to rims. E. J. Clark, Leytonstone, London.
5,854 (1910). Coagulating rubber. T. Cockerill, Colombo, Ceylon.
5,855 (1910). Treating rubber, etc. T. Cockerill, Colombo, Ceylon.
5,866 (1910). Jackets and covers for wheel tires. J. G. A. Kitchen, Scotland, Lancashire.
5,931 (1910). Synthetic caoutchouc; Isoprene and its homologues. W. H. Perkin, Manchester; F. E. Matthews and E. H. Strange, London.
5,932 (1910). Synthetic caoutchouc; Isoprene. W. H. Perkin and C. Weizman, Manchester, and F. E. Matthews and E. H. Strange, London.
5,980 (1910). Wheel tire. F. A. Churcher, Great Baddow, Chelmsford, Essex.
5,994 (1910). Felloes or rims for vehicle wheels. A. Turnbull, Glasgow, Scotland.
5,996 (1910). Tire attachment to rims. H. Silvester, Newcastle-under-Lyme, Staffordshire.
6,306 (1910). Spongy resilient fillings for tires. R. H. Pyvus and E. M. Pyvus, Derby.
*6,378 (1910). Marking golf balls. J. J. Blumberg, Brooklyn, N. Y.
6,405 (1910). Rubber tip for boots. J. J. Eckert, Strood, Kent.
*6,462 (1910). Vehicle wheels. J. Richardson, Buffalo, N. Y.
6,486 (1910). Artificial rubber. A. G. Bloxam, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 12, 1911.]
6,593 (1910). Tire attachment to rims. J. Lomax, Charlton-on-Medlock.
6,674 (1910). Manufacture of rubber pneumatic tire covers. H. A. Levens, Bromley, Kent.
6,678 (1910). Non-skid attachment for tires. I. W. Crutchlow, London.
6,717 (1910). Protector for pneumatic tire. G. H. Short, Radstock, near Bath.
6,846 (1910). Rubber protectors for boots, etc. A. J. Smith, London.
6,866 (1910). Rubber-coated fabric for tire repair. E. C. Lacey and R. Surridge, London.
7,139 (1910). Extracting resins from rubber. General Caoutchouc Co., Paris, France.

7,153 (1910). Devulcanizing rubber. C. P. Bary, Paris.
7,158 (1910). Rubber core for tires. R. K. Evans, London.
[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 19, 1911.]
7,204 (1910). Making rubber sole footwear. J. E. Chaper, Northampton.
*7,295 (1910). Pneumatic cushions for vehicle suspensions. W. I. Twombly, New York.
7,301 (1910). Pneumatic tires. B. B. Hill, London.

7,356 (1910). Rubber sole and heel protectors for boots, etc. A. T. W. Lengrum, Mardyke, Cork, Ireland.
 7,487 (1910). Protective cover for pneumatic tire. W. Fiala, Jicin, Bohemia, Austria.
 7,515 (1910). Pneumatic tire. J. H. Barton, Egremont, Cheshire.
 *7,580 (1910). Attaching tires to rim. G. W. Slater and J. M. Benham, Oakland, Cal.
 7,599 (1910). Rubber brake block for roller skate. W. W. Semmler, London.
 7,629 (1910). Elastic bands for wearing apparel. J. D. Tassy, Budapest, Hungary.
 *7,647 (1910). Elastic band for boxing gloves. S. Cline, Philadelphia, Pa. [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 26, 1911.]
 7,897 (1910). Rubber ferrules for hat pins. J. H. Floyd and P. V. Williams, Penygraig, South Wales.
 7,902 (1910). Springs for the cores of golf balls, etc. J. Child and B. S. Attwood, Manchester.
 7,905 (1910). Rubber block tires. H. Duncan, Glasgow, Scotland.
 7,907 (1910). Rim attachment for pneumatic tires. E. Squires, Saltley, Birmingham.
 7,917 (1910). Elastic composition. W. E. W. Richards, London.
 *7,942 (1910). Elastic tires. L. M. Nelson, Pennington, New Jersey.
 7,964 (1910). Elastic hose supporters. T. Morton, Birmingham.
 8,022 (1910). Elastic vehicle wheels. E. C. Kingsford, London.
 8,027 (1910). Tire attachments to rims. H. W. Lake, London.
 8,185 (1910). Knee protector with rubber fastenings. L. Lechner Michalkowitz, Silesia, Austria.
 8,199 (1910). Brush and like handles. J. R. Batley, London.
 8,216 (1910). Vehicle wheels. R. Haddan, London.
 8,432 (1910). Point protectors for hat pins. G. M. H. Payne, Upper Norwood, London.
 8,434 (1910). Stopper for medicine administering vessels. E. M. Bajom, Paris.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

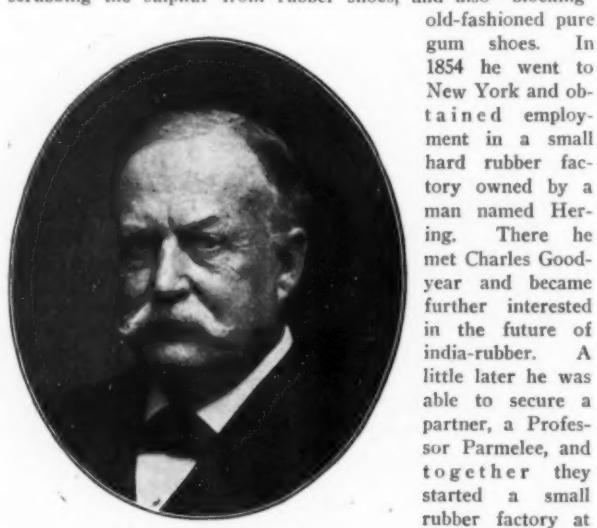
423,899 (December 20). G. Neff. Automatic machines for coating with celluloid, rubber, gutta percha, etc., strips of steel for the manufacture of bones for corsets, etc.
 423,904 (December 20). J. J. Patton. Improvements in tires for vehicle wheels.
 423,966 (March 1). Company known as Millwall Rubber Co., Ltd. Arrangement for the manufacture of soft or hard rubber articles by direct moulding from pulverized vulcanized rubber.
 424,023 (December 15). P. Minaud. Process of repairing pneumatic tires by reinforcement in the thickness either exterior or interior of the burst tire.
 424,074 (March 3). A. Martin. Elastic tire for vehicle wheel.
 424,112 (March 4). H. G. Hugon. Rubber block tires and protective shields.
 424,175 (December 24). S. Gouillardon. Pneumatic tire.
 424,242 (November 24). A. Joly and E. Davier. Process of recovering benzine and its homologues.
 424,244 (November 29). J. Horowitz. Unbreakable air chamber for automobiles, for bicycles and motorcycles.
 424,270 (December 13). F. Knipp. Protector for pneumatic tire for vehicles of all kinds.
 424,345 (November 19). P. L. J. Degrully. Sectional pneumatic wheel.
 424,389 (December 23). E. Balazs. Protective band for pneumatic tires for automobiles and other vehicles.
 424,474 (December 31). J. Guerrero. Elastic tire for vehicle wheels.
 424,497 (December 31). J. Donken. Improvement in elastic tires for vehicles.
 424,543 (January 3, 1911). J. MacDonnell. Pneumatic tire.
 424,649 (January 6). G. Bouquillon. Improvement in connecting rod pneumatics.
 424,725 (January 4). The company known as The International Rubber Co. Process and apparatus for extracting rubber or rubber-like substances from plants containing them.
 424,831 (January 12). J. D. Stidder. Improvements in tires for vehicles.
 424,870 (March 23, 1910). M. Bouchee. Portable system of vulcanization.
 424,961 (January 17, 1911). H. H. Carver. Improvement in manufacture of articles made from old rubber, ebonite, vulcanite or other analogous substances.
 424,966 (January 13). P. Beausoliel. Anti-skidding attachment for wheels.
 424,986 (March 26, 1910). C. Morel. Elastic tires for vehicle wheels.
 424,994 (January 18, 1911). F. G. Herrmann. Protective cuirasse for wheel tires.
 425,000 (January 18). B. Muench. Process of manufacturing rubber shoes from separate pieces.
 425,078 (January 21). L. Morane. Arrangement with extensible core for the vulcanization of pneumatic tires.
 [NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingénieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

AN OFFICIAL REPORT, forwarded by a United States consul, places the number of Pará rubber trees in various stages of growth in Cochin, China, at one million, three-fourths of which were planted prior to 1910, and about 15,000 tappable. The number of trees planted will be increased by 4,000,000, if the plans at present pending are carried out.

A MAN IN A MILLION.

THAT Francis H. Holton, eighty years old, dean of the rubber sundries trade, retired since 1900, but still vigorous, alert, kindly, should get the patent numbered 1,000,000, and a rubber patent at that, is a subject for congratulations all around.

Probably no man in his line is better known than Mr. Holton. He was born as long ago as 1831, in Northfield, Massachusetts, and it is interesting to chronicle that he is a cousin of the late Dwight L. Moody, and that both of them were clerks together in Boston when young. Mr. Holton, when he was quite a boy, went to work for his uncle, Mr. Fred Holton, who was then with the Hayward Rubber Company. His first work was scrubbing the sulphur from rubber shoes, and also "blocking" old-fashioned pure gum shoes. In 1854 he went to New York and obtained employment in a small hard rubber factory owned by a man named Herring. There he met Charles Goodyear and became further interested in the future of india-rubber. A little later he was able to secure a partner, a Professor Parmelee, and together they started a small rubber factory at the corner of



FRANCIS H. HOLTON.

Thirty-seventh street and Broadway. This partnership continued until 1860, when Mr. Holton decided to carry on the business alone and moved his works to Adams street, Brooklyn. Eight years later he took a Mr. Gray in as a partner, the firm name being Holton & Gray. Mr. Gray remained a partner until 1870, then sold his interest to C. B. Dickinson; in 1874 Mr. Holton also sold his interest to Dickinson, the factory being then operated as the Brooklyn Rubber Works. Later Mr. Holton started a factory in Gold street, New York, and built up a fine business. It was while in this factory that he met the late Dr. B. F. Goodrich, who induced him to leave New York and go to Akron to take charge of the specialty department of the B. F. Goodrich Company. Mr. Holton remained with the Goodrich Company for thirteen years, when he retired to spend his time in traveling and recreation.

The Holton tire is planned to be a substitute for the pneumatic. It has a cellular or honey-combed yielding part, supported by a solid ring filling about half of the inner portion



THE HOLTON TIRE. THE MILLIONTH PATENT.

of the shoe. To this solid portion are attached a series of flexible V-shaped springs. The illustration shows the inner portion of the tire with the shoe removed.

A Book for everybody interested in tires—"Rubber Tires and All About Them"—this office.

News of the American Rubber Trade.

WILL PROTECT VALUABLE PATENT RIGHTS.

THE Bowers Rubber Works (San Francisco, Cal.) are giving notice of their intention to protect their patent on one-piece diagonal, cross-expansion piston packing and to do it vigorously. The packing in question is the invention of Henry Dods, an engineer at one of the great mines on the Comstock Lode, and possesses a special faculty of expanding under pressure. The company has the exclusive right to manufacture it under the inventors' patents.

REPUBLIC RUBBER CO. INCREASES MANUFACTURING FACILITIES.

To enable them to keep up with orders, the Republic Rubber Company have contracted for the erection of a new building at their Youngstown, Ohio, plant. It will be 75 x 200 feet, of brick and re-inforced concrete, and of the "saw-tooth" type. It will be used entirely for the calendering process in their tire-making department.

NO INFRINGEMENT BY HARTFORD RUBBER WORKS COMPANY.

A SUIT by the Metallic Rubber Tire Company, of Jersey City, New Jersey, against The Hartford Rubber Works Company, in the United States District Court for the District of Connecticut, has been decided for the defendants. The cause of action was the alleged infringement by the Midgley non-skid tread, of patent No. 609,320, issued August 16, 1898, to Dr. Calvin Thayer Adams, of New York, of which the plaintiffs are now owners.

That patent had covered "a vehicle tire," and more specifically a bicycle tire; a claim having been eliminated which had been previously made in respect to a tire with wire interwoven in the tread. In the suit now brought this claim was substantially renewed. The present decision of the court is considered to indicate that inventions relating to bicycles, which may since have been brought to bear on the automobile industry, will not be regarded with much weight in litigated cases.

METALLIZED AEROPLANE FABRIC.

A NEW European fabric for aeroplanes and balloons is being imported by the Theo. H. Gary Company, of New York City. After being thoroughly rubberized it has been covered with a layer of light metal. As it reflects a large percentage of the light this fabric prevents the expansion of gases by the sun's rays besides minimizing wind friction.

ADDITION TO FISK RUBBER CO.'S PLANT.

Three of the buildings of the Fisk Rubber Company's plant at Chicopee Falls, Massachusetts, are being raised a story. This will give them about 25,000 square feet additional floor space, the greater part of which will be used for office purposes and the remainder for the regular tire manufacturing departments.

WEST INDIAN PROSPECTS FOR RUBBER GOODS.

Home from a visit to the West Indies on behalf of the Good-year Tire & Rubber Company, C. W. Martin, Jr., general Southern manager, and J. M. Chapman, foreign representative of that company, report prospects good for the increased sale of American goods. Cuba, Porto Rico, St. Thomas, Dominica, San Lucia and Barbados were visited and the travellers report the field ripe for a systematic invasion of American manufacturers.

NEW YORK ROYAL RUBBER CO.—SETTLEMENT.

The New York Royal Rubber Company (Weingarten & Durst) effected a settlement with creditors on the basis of 35 cents on the dollar, payable 25 cents cash, and 10 cents by note. The petition filed against them has been dismissed.

VOORHEES TIRE LIFE PROLONGERS.

The value of a tire being judged by its durability, the merits of the standardized "Ideal" inner sleeve and casing, made by the Voorhees Rubber Manufacturing Company, Jersey City, New Jersey, are meeting with deserved recognition, as indicating the general character of the company's line of automobile accessories.

NEW NON-PUNCTURABLE TIRES.

A SUCCESSFUL demonstration of the "Bridge" pneumatic tire, invented and patented by Clarke F. Fisk, of Allentown, N. J., was lately given at the United and Globe Rubber Company's factory, Trenton, where the tire will probably be made. Its principal feature is a specially constructed tread, for which the inventor claims the merit of rendering the tire puncture-proof, while giving three times the wear of an ordinary tire as well as marked resiliency.

"THERE IS NOTHING LIKE RUBBER."

A NEW JERSEY charter was recently granted the National Hygienic Floor Company, a \$1,000,000 corporation, of which Linton Satterthwait, the Trenton lawyer, is registered agent, the objects of the company being the construction of hygienic floors in railway cars, offices, public buildings and private residences. It will doubtless give its attention largely to the merit of rubber for the purposes indicated, thus benefiting Trenton industry.

IMPORTANT ADDITION TO THE DIAMOND PLANT.

The Diamond Rubber Co., of Akron, is erecting, at a cost of \$26,000, a modern fireproof building, forming an addition to the milling department.

SYSTEMATIC RUBBER ROBBERIES.

Albert Obeski, aged 17, one of the hands at the Essex Rubber Works, Trenton, was recently arrested while at work on a charge of robbing the firm. It was alleged that he had been systematically taking quantities of crude rubber.

MINNESOTA TIRE LAW.

A law, passed on July 1, by the Legislature of Minnesota, requires that all automobile tires shall be branded with the year of their manufacture, sellers of such tires unbranded being guilty of a misdemeanor. No effort seems to have been made to prosecute dealers and branch houses, who held stocks of unbranded tires when the law went into effect.

DIAMOND TIRES IN MANILA.

In connection with the increasing favor of automobiles in the Middle and Far East, it is of interest to note that a set of Diamond tires was recently shipped to the Hon. W. Cameron Forbes, Governor-General of the Philippine Islands, for use on his personal machine. A further proof of the efficiency of these tires is afforded by the fact that at a recent meeting of the Chiefs of Departments in the city of Manila, the purchasing agent was instructed to buy Diamond tires for all department automobiles.

INNER SHOES FOR TIRES.

Doubling the tire mileage in conjunction with immunity from blowing out and puncture are among the advantages claimed for the "Innershu," manufactured by the Inner Shoe Tire Co., of Grand Rapids, Michigan. It is made of bullet-proof Sea Island cotton fabric, and by exactly fitting a tire relieves any strain from within, at the same time protecting the tube.

HOOD RUBBER COMPANY—DIVIDEND.

The Hood Rubber Company, Boston, Massachusetts, declared and paid its regular quarterly dividend of 1½ per cent. on its preferred stock on August 1.

B. & R. RUBBER CO.—INCREASED MANUFACTURING FACILITIES.

The addition of three new boilers and a tandem compound engine, with various new machines in the manufacturing departments, will enable the B. & R. Rubber Company, North Brookfield, Massachusetts, to increase its working force by about 40 men and keep a double shift working day and night.

PERSONAL MENTION.

Judge LeBaron Colt, Mr. Russell G. Colt, and his gifted wife, Ethel Barrymore, recently had a very narrow escape through the breaking of the front axle of the touring car in which they were riding.

F. E. Stockwell, Philadelphia manager of the Boston Wover Hose and Rubber Company, spent August at Holly Beach, New Jersey, and incidentally proved himself an expert salt water fisherman.

C. A. Emerson, purchasing agent of the United States Rubber Company, is now on the "Adriatic" on his way back from a two months' trip in Europe, devoted to rest and relaxation.

Prof. Rusby, the expert pharmacologist and authority on guayule, palo amarillo, etc., who has become involved, through a red tape entanglement in the imbroglio that threatens to deprive the Department of Agriculture of the valuable services of Prof. H. W. Wiley, the eminent chemist and analyst, will be remembered as one of the speakers at the last New York dinner of the Rubber Club of America.

Edgar B. Davis, of the General Rubber Company, was taken sick in Sumatra the latter part of June, the result of too hard work in the tropics, and went into the mountains of Java to recuperate. The doctors there advised him to go to Neuenahr, Germany, to get the benefit of the baths. He stayed there five weeks and was greatly benefited. He is now spending a short time at San Moritz, Switzerland, but expects to return to this country about the first of October.

Mr. F. H. Sanford, of A. H. Alden, Limited, Manaos, Brazil, after a summer spent in England and the United States, returned to Brazil by the Booth Line August 15. Mrs. Sanford and son will remain in the United States until October, when she will join her husband.

W. F. Bass, General Manager of the General Rubber Company, returned about the middle of August from a month's visit in Europe, where he devoted himself to crude rubber problems, spending considerable time in the offices of the General Rubber Company in London and Liverpool, and also in the crude rubber markets at Antwerp and Rotterdam.

To commemorate his retirement as sales-manager of the Diamond Rubber Company, in New York, the fellow-salesmen of Harvey J. Woodward, gave a dinner in his honor at the Hotel Cadillac. The company at the same time extended a welcome to Norman E. Oliver, his successor.

Elisha S. Williams, president of the Rubber Goods Manufacturing Company, is expected in New York within the next few days after a two months' absence in Europe.

Homer E. Sawyer, general manager of the United States Rubber Company, who has been passing the greater part of the summer at the Mt. Washington Hotel, Bretton Woods, is expected back at the New York office immediately after Labor Day.

J. Simoa Da Costa, of the firm of the Alves Braga Rubber Estates and Trading Company, Limited, Pará, is spending the month of September in the United States.

Lester Leland, Vice-President of the United States Rubber Company has spent the summer at his fine estate in Manchester-by-the-Sea, Massachusetts.

TRADE NOTES.

It is very rarely that an advertising expert forsakes his particular field to take up literary work. In the case of Mr. John P. Lyons, who has left the United States Rubber Company to accept a position on the editorial staff of THE INDIA RUBBER WORLD, it is simply a case of returning to one's first love. For many years Mr. Lyons was a newspaper writer and editor in Boston, and literary work has always appealed to him more strongly than has work in commercial lines. Mr. Lyons engagement with THE INDIA RUBBER WORLD begins with September of this year.

THE Western Rubber & Supply Company, Kansas City, Missouri, are installing a complete, solid tire rebuilding plant.

The Toledo Tire & Repair Company, Toledo, Ohio, have the distributing agency for the Firestone pneumatic motor truck, and carriage tires and rims.

The Fegley Tire Chain Company, of Philadelphia, Pennsylvania, and the Pearsall-Traver Manufacturing Company, New York, New York, have united to form one company, the Reliance Tire Chain Company, with offices and factory in New York.

The Fisk Rubber Company, Chicopee Falls, Massachusetts, recently ordered thirty Brush light-delivery trucks shipped to the leading cities of the country. They will be used by salesmen to carry supplies and repairs.

The South Bend Tire & Rubber Company, South Bend, Indiana, will establish a factory in that city for the manufacture of automobile tires. The company is financed by Akron and Mansfield capitalists.

K. L. Horst, formerly a foreman in the factory of the Continental Tire Company, Hanover, Germany, has opened a repair shop and garage at Springfield, Ohio.

The Western Tire & Specialty Company has commenced business at Wichita, Kansas. It will deal in tires and accessories exclusively.

The Republic Rubber Company, Youngstown, Ohio, has erected a store for its Pacific Coast branch in San Francisco. It is a two-story and basement, pressed brick structure, 70x137 feet, and is in charge of Mr. M. E. Murray.

The Lake Shore Tire shop has been established at Sheboygan, Wisconsin. It will repair and market automobile tires.

The Federal Rubber Manufacturing Company, Milwaukee, Wisconsin, have installed a branch in Chicago. This is one of the first established by the new tire company and is in line with its policy to have branches and agencies in all of the principal cities of the country. Mr. George W. Stephens, formerly with the American Tire & Rubber Company, is manager, and Mr. Frank Loofbourrow has severed his connection with the United State Tire Company to become assistant manager. The new quarters at 1434 Michigan avenue are commodious, and the company enters the Chicago market particularly well fitted to get business, both because of its desirable location and the personnel of the people in charge. The territory covered by the Chicago branch will be the entire States of Illinois and Iowa and the northern portion of Indiana.

The McEwen Vulcanizing Company, of Long Island City, New York, advise THE INDIA RUBBER WORLD that they have sold their gas vulcanizers recently to the following: Kelly Springfield Tire Company, J. Ellwood Lee Company, Quaker City Rubber Company, A. Delfrige (on Forty-first street, only French tires), Republic Rubber Tire Company, Twentieth Century Tire Company, Gillette Tire Company, Seamless Rubber Company, United States Motor Tire Company.

Arrangements are completed to reopen the rubber factory at Setauket, L. I., which has been closed for the last three years. The buildings have been thoroughly overhauled and much new machinery has been installed. The new company is known as the Co-operative Rubber Company, and will manufacture rubber shoes, boots and tennis shoes. Joseph Elberson, as usual, will be in charge of the factory.

NEW INCORPORATIONS.

BELTO COMPANY, August 2, 1911, under the laws of New York. Authorized capital, \$25,000. Incorporators: Abraham Rabinowitz, 68 Lenox avenue; Henry J. Levy, 64 West 144th street; Isidore P. Levy, 561 West 163rd street; all of New York City. Location of principal office, Manhattan. To manufacture patented rubber belt device for trouser bands, etc.

Eagle Rubber Company, July 5, 1911, under the laws of Connecticut. Authorized capital, \$25,000. Incorporators: Louis C. Bullock, Benjamin Sack and Francis S. Tipper; all of Stamford, Conn. To manufacture and sell rubber substitutes, etc.

Germelite Manufacturing Company, July 26, 1911 under the laws of New Jersey. Authorized capital, \$500,000. Incorporators: Thomas F. Farrell, Arthur C. Reeves, both of 15 Exchange place, Jersey City, N. J., and Hugh E. Western, 150 Madison avenue, New York City. To manufacture, sell and use and deal in Germelite; to buy, sell, manufacture and deal in generally, at wholesale and retail, rubber goods, etc.

R. H. Hoskins Company August 10, under the laws of New York. Incorporators: Roy H. Hoskins, 628 West 114th street, New York City. Location of principal office, Brooklyn, New York.

Kutz Auto Tire Company, July 28, 1911, under the laws of Delaware. Authorized capital, \$1,000,000. Incorporators: M. H. Kutz, 20 Plymouth street, Springfield, Massachusetts; Percy Heap, 540 Canal street, Holyoke, Massachusetts, and Morris Friedberg, 150 Nassau street, New York City. To manufacture the woven leather tire for automobiles.

La Masica Banana & Rubber Plantation Company, Limited, June 14, 1911, under the laws of Louisiana. Authorized capital, \$100,000. Incorporators: H. W. Hullinghorst and Dr. Mary Armand, both of New Orleans, Louisiana. The company has been incorporated to purchase, acquire, lease, etc., real estate, for the purpose of growing bananas, rubber, etc.

McKenna Rubber Company, August 1, 1911, under the laws of New York. Authorized capital, \$2,000. Incorporators: James H. and Kathryne E. McKenna, both of Schenectady, New York, and Frank L. McKenna, Whitehall, New York. Location of principal office, Schenectady, New York. To manufacture rubber bushing to be used on glasses.

Mystic Rubber Company, August 3, 1911, under the laws of Massachusetts. Authorized capital, \$15,000. Incorporators: William B. Marshall, Everett; John W. Meldrum, Everett, and Edwin P. Fitzgerald, Somerville—all of Massachusetts. To manufacture, purchase and sell goods, wares, merchandise, etc.

Oceanic Raincoat Company, August 25, 1911, under the laws of New York. Authorized capital, \$5,000. Incorporators: David L. Solomon, Harriet Hyams and Maurice B. Hartman—all of 54 West 21st street, New York city. Location of principal office, Manhattan. To manufacture rubber coats.

Overman Motorcycle Tire Company, July 28, 1911, under the laws of New York. Authorized capital, \$25,000. Incorporators: John J. Reilly, 854 West 181st street; Henry W. Torney, 65 Park Row, and James A. Beha, 171 West Ninety-fifth street, all of New York City. Location of principal office, Manhattan. To manufacture tires for cycles; also supplies.

Progressive Raincoat & Clothing Company, July 29, 1911, under the laws of New York. Authorized capital, \$10,000. Incorporators: Alexander Sweetgall, 100 Hart street; Jacob Freedgood, 220 Throop avenue, and Israel Pearlman, 223 Throop avenue, all of Brooklyn, New York. Location of principal office Brooklyn, New York. To manufacture rubber clothing, etc.

Security Reliner Company, July 24, 1911, under the laws of New York. Authorized capital, \$50,000. Incorporators: Elmer I. and Grace A. Emerson, and Orrin T. Barbe, all of Montgomery, New York. Location of principal office, Montgomery, New York. To manufacture auto tire liners and other accessories.

Spring Tire Company, August 9, under the laws of New York. Authorized capital, \$8,000. Incorporators: Henry B. Hill, 180 Montague street; William Eiermann, 1981 Fulton street, and William A. Crane, 49 Stone street all of Brooklyn, New York. Location of principal office, Brooklyn, New York. The company has been incorporated to deal in rubber tires.

Triplex Tube Company, July 6, 1911, under the laws of Maine. Authorized capital stock, common, \$700,000; preferred \$300,000. Incorporators: Edward J. Connor, C. F. Tennant and William H. Culliver all of Portland, Maine. To manufacture, sell and deal in wheel tires of all kinds.

United Rubber Company, August 12, 1911, under the laws of New York. Authorized capital, \$100,000. Incorporators: Ada A. Sands, Eva C. Baker and Frank B. Vermilya, all of 5 Nassau street, New York City. Location of principal office, Manhattan. To manufacture rubber goods.

MORE RUBBER MILLS!

THE Naugatuck *Daily News* advocates the appointment of an "Industrial Commissioner," whose business it would be to attract new industries to that city.

A FORTUNATE ESCAPE.

Philip McGrory, of Trenton (the well-known scrap rubber dealer), accompanied by Mrs. McGrory, two daughters and his brother-in-law, recently had a narrow escape in a head-on collision between his automobile and that of Fritz Guittner, of Philadelphia.

A GOODRICH RUBBER EXTRACTION DISPLAY.

Carrying the onlooker back to the original sources of rubber, the windows of the Goodrich Tire Company's Philadelphia branch were recently arranged to represent a South American rubber forest. Natives could be seen tapping the trees, smoking the latex and performing other work connected with extraction. All the implements used in gathering and preparing rubber were shown, and thousands stopped to witness the display.

ALLEGED INFRINGEMENT OF "IMPERIAL" TRADE MARK ENJOINED.

The United States Circuit Court for the Southern District of New York has issued an injunction at the suit of the McGraw Tire & Rubber Company directed against Edward C. Griffith, Automobile Tire Company, Griffith Tire & Rubber Company, and Imperial Tire Company. The defendants and their representatives are restrained, during the pendency of this action, from manufacturing, selling or offering for sale, any automobile tires with the name "Imperial" branded or moulded thereon, as their trade mark or trade name.

AUTO HORN DUTIES.

According to a recent customs decision, rubber bulbs imported in one package and an equal number of auto horns in another package by same steamer, could not be treated separately at 35 per cent. and 45 per cent. They had to be regarded as entireties, paying 45 per cent. as manufacturers of metal.

A NEW SCRAP RUBBER COMPANY.

Under the style of H. Muehlstein & Company, Mr. Herman Muehlstein has entered business for himself, having on July 25, severed connection with the Loewenthal Company. He will deal exclusively in all grades of rubber scrap, both foreign and domestic, and in addition to a seven-story New York warehouse (with the newest labor-saving devices), will operate branches at Akron and Chicago, under the skilled management, respectively, of Mr. Charles Freshman and Mr. Charles Muehlstein.

HAMILTON RUBBER COMPANY EXPANDING.

The Hamilton Rubber Company, Trenton, New Jersey, are making preparations to double their capacity by the erection of a three-story building 70 x 180 feet, as an addition to their present plant.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending August 26:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]
Last Dividend, April 30, 1900—1%.

Week July 29	Sales 3,700 shares	High 41½	Low 40½
Week August 5	Sales 7,300 shares	High 40½	Low 37½
Week August 12	Sales 8,300 shares	High 37½	Low 35½
Week August 19	Sales 6,200 shares	High 38½	Low 36
Week August 26	Sales 3,200 shares	High 37½	Low 36½

For the year—High, 47½, March 1; Low, 35½, August 12.
Last year—High, 52%; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, July 31, 1911—2%.

Week July 29	Sales 400 shares	High 113½	Low 113½
Week August 5	Sales 800 shares	High 113½	Low 113
Week August 12	Sales 1,000 shares	High 112½	Low 111
Week August 19	Sales 300 shares	High 111	Low 110½
Week August 26	Sales 1,125 shares	High 110	Low 108½

For the year—High, 115%; July 7; Low, 108%; August 26.
Last year—High, 116½; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, July 31, 1911—1½%.

Week July 29	Sales 100 shares	High 77½	Low 77½
Week August 5	Sales 300 shares	High 75	Low 74½
Week August 12	Sales 400 shares	High 74	Low 72½
Week August 19	Sales 225 shares	High 72½	Low 72½
Week August 26	Sales 200 shares	High 72½	Low 72

For the year—High, 79, March 1; Low, 72, August 25.
Last year—High, 84; Low, 59%.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week July 29	Sales 18 bonds	High 104½	Low 104½
Week August 5	Sales 35 bonds	High 104½	Low 104½
Week August 12	Sales 8 bonds	High 104½	Low 104
Week August 19	Sales 32 bonds	High 104½	Low 104
Week August 26	Sales 17 bonds	High 104½	Low 104

For the year—High, 105, July 15; Low, 102½, March 5.
Last year—High, 106; Low, 102½.

TRADE NEWS NOTES.

Norman E. Oliver, manager of the Buffalo, N. Y., branch of the Diamond Rubber Company, has been transferred to New York, where he takes the position of secretary of the Diamond Rubber Company, of New York.

Arthur Reeve, of the United States Rubber Co., has recently returned from a very successful seven weeks' trip to England and the Continent, during which he visited the principal buyers of his company's goods in London and Hamburg, Berlin, Copenhagen and other points. He made a careful canvass of the requirements of the European trade, with special reference to styles and lasts, and came back with a fund of valuable information regarding the export trade in rubber footwear.

The plant, formerly occupied by the Conant Rubber Co., at South Framingham, Mass., is being remodeled by the Fibre Products Co., who will use it for the manufacture of leather board goods.

F. J. Gleason, of the Walpole Rubber Works, who vibrates between Walpole, Massachusetts, and Granby, Quebec, where are situated the two factories of the company, has been doing the distance, when he could, this Summer, by automobile.

Fred. E. McEwen who has long been known both in the motor trade and in connection with tires, has formed a company known as the Auto Credit Co., Incorporated, explained as being "automobile bankers." Mr. McEwen, in describing his project, explains that automobiles have been about the only products heretofore sold on a strictly cash basis. That this was due to the supply being inadequate to the demand. Now that the demand is beginning to exceed the supply many will wish to buy on time. They, therefore, turn to the Auto Credit Company, select their car, any make, pay one-half cash, agree on a series

of monthly payments for the balance, and the Credit Co. purchases the car, hands it over to them for a 6 per cent. commission.

Recent changes in the organization of the Swinehart Tire and Rubber Co. include the appointment of W. J. Kreuder, formerly with the Goodyear Tire and Rubber Co., as general superintendent of the Swinehart Tire and Rubber Co.'s factory, at Akron, Ohio. J. J. Tompkins, formerly of the Hartford Rubber Works Co., Detroit branch, has been made manager of the Swinehart Co.'s branch in Philadelphia, with G. E. Grimes, formerly of the Philadelphia branch of the Republic Rubber Company, on his sales staff, and J. J. O'Connor has been made manager of the Swinehart agency in Bridgeport, Conn. At a special meeting of the company's stockholders it was unanimously voted to increase the capital stock from \$400,000 to \$800,000, the rapid growth of the company's business warranting this step.

The branch opened by the Firestone Tire and Rubber Co., Akron, Ohio, at 724 Main street, Buffalo, will be in charge of R. W. Ingersoll as manager, in place of R. W. Phelps as first announced. Mr. Ingersoll is well known in rubber trade circles as sales representative for the Firestone company.

After subjecting many fabrics to exhaustive practical tests, the United States government has selected, for the military aeroplanes, the rubberized aeroplane fabric manufactured by the Goodyear Tire & Rubber Co., Akron, Ohio. Not only is it non-absorptive and consequently free from wide variations in weight in the event of exposure to moisture, but it does not stretch or tighten when wet or drying, a serious fault with most fabrics hitherto used for this purpose.

The Mulconroy Co., Inc., Philadelphia, Pennsylvania, owing to the increased demand for their flexible metallic hose and "Seven League" sewed leather-soled rubber boots, have been compelled to secure larger quarters. Their new factory is at Nos. 108, 110 and 112 North Franklin street, where they will have three times as much room as at the present address.

Auerbach Bros. Co. (Chicago), dealers in scrap rubber, etc., whose incorporation was noted in last month's INDIA RUBBER WORLD, have equipped their warehouse, at Nos. 3101 to 3111 Market Square, with every necessary facility for handling scrap rubber, scrap metal, etc., and having a floor space of 20,000 square feet, are prepared for a large business, having all the requisite experience.

Fifty-nine distinct styles of dress shields, ten sizes for each, is what the full line of the I. B. Kleinert Rubber Company counts up.

The Empire Tire Company, Trenton, New Jersey, are on the market with a new disc tread for automobile tires. The disc is of frictioned fabric, moulded into the tread of the tire, and is designed not alone to prevent skidding, but adds to the life of the tire as well.

The L. Candee Rubber Company closed their big plant at New Haven, Conn., on August 15 for a month to allow of extensive alterations and repairs to the machinery.

Mr. A. Delfruge, a French rubber man, has opened a repair shop on Forty-first street, New York, where he repairs only tires of French make. Anti-Oskids, with German accent, or inner tubes of Swedish origin are taboo.

The new store house erected by the Converse Rubber Shoe Company, Malden, Massachusetts, to replace one of the buildings destroyed at the recent fire in their works, is completed and occupied.

E. A. Wild, formerly with the Republic Rubber Company, has begun business for himself at Youngstown, Ohio. He has the local agency for Republic tires.

TRADE NOTES.

Wright & Ditson (Boston, Massachusetts), well known as producers of the "green circle" golf ball, are also on the market with a "red circle" and "black circle," the latter being a small ball.

The United States Tire Company claim that they are promoting the largest advertising campaign ever attempted by any tire company. It is gossipped that they have \$250,000 to spend.

The Michelin Tire Company, Milltown, New Jersey, true to their published convictions, have equipped their factory trucks with pneumatic instead of solid tires.

The Manufactured Rubber Company, Philadelphia, Pennsylvania, has declared a regular quarterly dividend of 1½ per cent. on their preferred stock.

Gorham-Revere Rubber Company have secured a long-term lease on a four-story brick building on Fifth street, Portland, Oregon. The ground floor will accommodate their offices and show-rooms, on the upper floors will be the retail and wholesale departments.

Rapid progress is being made with the Stoughton Rubber Company's new building, at Stoughton, Massachusetts, and the structure is now rapidly approaching completion.

A Pacific Coast branch for the Republic Rubber Company, is in course of erection at Golden Gate and Hyde streets, San Francisco. The building will be two stories and basement, 70x157 feet, and is about ready for occupancy. M. E. Murray, the company's general Western manager, will be in charge.

A unique advertisement of the Republic Rubber Company, Youngstown, Ohio, is in the form of an artistic postal card, bearing on one side in colors a bird's-eye view of their plant and a picture of their Staggard tread tire, and on the address side a picture of the local agency in the territory in which it is sent out.

Alexander Dow, who will be remembered as the inventor of the non-puncturable inner tube, which had a pouch filled with paste and feathers that actually held air no matter how many nails were driven through it, has joined the selling force of Wyckoff, Church & Partridge, New York.

At the general meeting of The Miner Rubber Co., Ltd., Granby, Quebec, Mrs. S. H. C. Miner was elected president; Mr. W. H. Miner, vice president and general manager; Mr. R. R. Macaulay, secretary-treasurer, and Mr. A. C. Flumerfelt, chairman of the executive committee. Mrs. Miner and Mr. Flumerfelt were also added to the board of directors.

In view of the erroneous ideas prevailing as to the tire expense in connection with commercial vehicles, a recent report, made to the United States Tire Co. by the Philadelphia (Pa.) Electric Co., may be of interest. The company in question uses a number of motor trucks and finds that six and seven thousand miles is not an uncommon record for their solid tires, while many that have run over 5,000 miles are still good for long service. Records of 8,922 and 8,817 miles were recorded for two tires still in excellent condition. Hartford solid tires were used on all these vehicles.

After covering 200,000 square feet of surface with Diamond tire signs, advertising car No. 4, of the Diamond Tire Company, recently reached Minneapolis after a sign-painting trip from Memphis, Tenn. One of the car's crew of five men was missing, having been badly injured when the car upset on a sandy stretch in Iowa. The company has eight such cars out, covering the country with Diamond tire signs.

Messrs. J. M. and L. Waterbury, who are reckoned as among the best polo players in the world, are interested in the Waterbury Company, and the New York Rubber Reclaiming Company.

The Hardman Tire & Rubber Company, Belleville, New Jersey, are making a strong canvass for the support of automobileists for "single-cure tires."

RUBBER-COVERED CALENDER ROLLS.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

Sir: Information about any branch of the India rubber manufacture as carried on in the United States, is read with pleasure by practical mill managers here, in England. Hence the article on "Rubber Rolls of Many Sorts" was of great interest.

This does not mean that we intend to emulate our American cousins in making typewriter rubber-covered platens, not a bit of it; we have our own special work to do.

Here is a record of part of a rubber mill manager's daily duty in connection with the cotton and woolen industries of Lancashire and Yorkshire. These industries require a very great number of rubber-covered calender rolls for dyeing, printing of fabrics and wringing purposes.

The importance of this business rubber-covering of calender rolls is shown by the fact that it requires 20 qualities of compounded rubber, every one of which must be beautifully balanced in composition to fulfil the various working conditions required.

Our (1910) record, which will take some beating for heavy calender rolls is as follows:

January	22	Calender Rollers Covered.
February	43	" "
March	33	" "
April	19	" "
May	10	" "
June	24	" "
July	21	" "
August	22	" "
September	23	" "

217 = 9 months' covering.

The Bradford Dyers' Association, a combination of large dyeing firms, sometimes gives an order for 24 or more rolls at a time.

The paper industry makes use of the largest rolls. We have wondered to see with what great delicacy of touch a 5-ton rubber-covered roll will pick up tissue paper, and continue doing so for many miles in length without tearing; running about one mile in eight minutes.

We covered with rubber of special quality a 10-ton calender roll for a paper mill in Norway. Dimensions of roll on working face 164 in. x 26 in. diameter. Quantity of rubber used, 922 lbs.; using about \$1,000 worth of good quality rubber.

We covered two paper rolls for the Thames Paper Mills at Purfleet-on-Thames, with special dark quality; one roll 121 in. on working face by 22 in. diameter, which took 730 lbs. of rubber covering.

However, our largest piece of work was a set of six calender rolls, for Edward Lloyd, Limited, of Sittingbourne, Kent, known years ago as *Lloyd's Weekly* newspaper of London, one of the earliest Sunday newspapers. Curious ingenuity was shown in advertising *Lloyd's Weekly* newspaper. Among others, all the pennies Mr. Lloyd could lay hands on were embossed by a cleverly constructed machine with the title and price of the new journal. The *Times* soon drew attention to this defacement of Queen Victoria's coin, and so gave a better advertisement still. The skill of the American machine makers was put to a test which produced for *Lloyd's Weekly* Hoe's first great web machine—adopted immediately afterward by two morning papers in London. This set of six rolls took 3,767 lbs., or 1 ton 13½ cwt. of best quality rubber covering.

ENGLISH EXPERT.

The Rubber Growers' Association of London, assembled in general meeting, awarded the gold medal of the association to A. Staines Manders, organizing manager of the International Rubber Exhibition. No award could be more appropriate or more deserved. We congratulate Mr. Manders.

NEW TRADE PUBLICATIONS.

BYERLEY & SONS (Cleveland, Ohio), manufacturers of Byerlyte asphalt, have just issued four very attractive and interesting booklets on asphalt and its various uses, with particular reference to the adaptability of Byerlyte products for every purpose for which asphalt is used including rubber compounding.

CENTRAL ELECTRIC COMPANY (Chicago, Ill.). A price list and discount sheet for August, 1911, applying to the publisher's 1909 catalogue, No. 26, the 88 octave pages of this publication fairly cover the field of electrical supplies. The amount of matter included necessitates close printing, but care has been taken to make it legible, the excellent arrangement assisting in the attainment of this end.

TYER RUBBER CO. (Andover, Mass.). The new catalogue of the Tyer Rubber Co. leaves little to be desired in respect to its completeness and arrangement. It is, moreover, typographically letter perfect, with full page illustrations, many in color, that are beautifully executed. The catalogue shows a complete line of rubber sundries with their hard rubber accessories, together with many special lines for stationers and surgeons. It is solidly bound in crimson board, the covers being removable for the insertion of supplementary sheets.

ONE OF THE MOST BEAUTIFUL SAMPLE BOOKS that has come to our notice is that of J. C. Milne, and covers light-weight artistic proceedings in a great variety of colors and shades. There are some 58 triangular samples in the first pages of the book, showing various kinds of artistic ornamentation in stripes, plaids and checks. These are on various colors of rubber-surfaced background. Following this are pages showing "colorings for grounds only" in black, blue, slate, tans, maroons, greens, etc.

BANIGAN RUBBER COMPANY (Baltimore, Maryland) issue List No. 116 H., covering their "wet weather goods." Its 44 legibly printed pages, 8 x 3 1/2 inches, describe and illustrate a full line of their "Lion Brand" waterproof garments of all styles, for men, women and children, quoting prices on each article and commenting on its qualifications. Attention is also called to the fact that the publishers are the exclusive selling agents for Banigan and Woonasquatucket brands of rubber boots and shoes.

ASBESTOS RUBBER GOODS.

THE use of asbestos in rubber compounding is as old almost as the rubber industry itself. It is only in the last few years, however, that it has assumed any great importance. German, and shortly afterwards, English manufacturers were the first to take it up on any considerable scale. At the present time, however, the Americans are using it freely, chiefly in insulation and mechanical lines. The pioneer in America was the Johns Pratt Co., of Hartford, Conn., who produced "vulcabeston," a hard rubber asbestos for a great variety of electrical purposes. Asbestos is also used in mechanical lines for a variety of steam packings, especially for superheated steam.

One of the most interesting of the developments of the use of asbestos in rubber compounds was the invention of the lining for automobile brakes. The first liners were of metal. The trouble was, however, that metal to metal in brakes sometimes "freezes." A mixture of rubber and asbestos in the form of a narrow belt, however, not only acted as a most efficient brake, but developed lasting qualities that were remarkable. If we are not mistaken, the Thermoid was the first in the field with this type of brake liner. There are today, however, many others, such as the "I-M Non Burn," the "Sa Best So," the "Motobestos," the Multibestos," "Raybestos," etc.

Patented compounds cannot be considered secret, else why should they be published. As a rule they are chiefly valuable

for comparison or suggestion. The following show presumed uses for asbestos:

FOR INSULATION (AMERICAN).

5 lbs. asbestos.
2 1/2 lbs. shellac.
1/4 lb. coal tar.
1 lb. oak black.
1/4 lb. paraffine.
2 lbs. silicate of soda.
1 qt. water.
1 lb. fir balsam or Burgundy pitch.
4 lbs. ground asbestos.
1 oz. sugar, sorghum, or glucose.
Saturated solution of 3 grs. oxalic acid.

INSULATION MATERIAL (AMERICAN).

60 lbs. of asbestos (for fire and heat resisting).
25 lbs. of rubber (for binding material).
15 lbs. of soapstone (as lubricating material).
Rubber may be raw or vulcanized, if raw add vulcanizing material. Mineral wool, fine spun glass, etc., may be substituted for asbestos. Powdered slate or pumice stone or talc may be added with or without the soapstone.

INSULATION (ENGLISH).

25 lbs. of Para rubber.
15 lbs. asbestos.
4 lbs. sulphur.

CORE PACKING (AMERICAN).

Core of asbestos instead of rubber.
In wrapping the core add ground asbestos to the rubber compound, apply to the canvass.

WOODITE OR WHALITE PACKING (ENGLISH).

19 lbs. asbestos fiber.
19 lbs. asbestos powder.
Earth wax.
4 1-3 lbs. finely ground charcoal.
10 lbs. whalebone, ground or shredded.
40 lbs. Pará rubber.
2 1/2 lbs. sulphur.

HOSE AND BELTING (AMERICAN).

10 lbs. india rubber.
2 lbs. ground asbestos.
Vulcanizing material to suit.

NON-PUNCTURABLE TIRE TREAD (ENGLISH).

10 lbs. Pará rubber.
2 lbs. asbestos.
3 1/2 lbs. litharge.
1 lb. lime.
5 lbs. powdered zinc.
12 oz. sulphur.

HARD RUBBER FOR SELF-LUBRICATING GEARINGS (ENGLISH).

14 lbs. plumbago.
14 lbs. asbestos.
4 lbs. rubber.
1 lb. sulphur.

THE ACRE TERRITORY AND BOLIVIA.

According to a recently discovered map, dated 1867, the Acre territory belonged to Bolivia. It is said that this fact may lead to Bolivian protests against the Acre treaty of 1870. However, a further report adds that the existence of the map of 1867 having been known to Rio Branco it will not change the aspect of the question.

Review of the Crude Rubber Market.

IN harmony with the New York prices and in marked contrast with the situation a year ago (when the European auctions heralded a further step in the decline) the July sales at Havre and Antwerp showed an advance of 8@14 per cent. According to cable advices the August auctions displayed a further rise of 5@8 per cent. These advances at typical points, make an average upward improvement of about 15 per cent. since June last.

In connection with this advance is a reduction of the stock in Antwerp, which, on July 31 last, was 465,734 kilos., as compared with 733,977 kilos. on June 30; standing at a lower figure than at the end of July in any recent year. This movement in the month of July indicates larger purchases for consumption. July sales represented 571,294 kilos., as compared with June sales 267,025 kilos. England for July showed an excess of 900 tons in deliveries over importations and a corresponding reduction in stock on July 31, as compared with June 30.

According to the news brought by a member of the trade who has lately come back from London, dealers in that market expected that the relative smallness of stocks would bring up-river Pará to the equivalent of \$1.20 or higher; particularly when the new crop begins to come forward towards the close of the year. Germany is expected to prove a large consumer, as soon as stocks of various qualities become more abundant. American stocks in jobbers' hands are likewise reported to be small. In harmony with London developments, the New York quotation for up-river fine on August 29 was \$1.16.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, August 31—the current date:

	Sept. 1, '10.	Aug. 1, '11.	Aug. 31, '11.
Islands, fine, new.....	179@180	104@105	108@109
Islands, fine, old.....	none here	@107	110@111
Uriver, fine, new.....	196@197	114@115	117@118
Uriver, fine, old.....	198@199	118@119	119@120
Islands, coarse, new.....	94@ 95	61@ 62	62@ 63
Islands, coarse, old.....	none here	none here	none here
Uriver, coarse, new.....	142@143	95@ 96	97@ 98
Uriver, coarse, old.....	none here	none here	98@ 99
Cametá	95@ 96	67@ 68	67@ 68
Caicho (Peruvian) ball.....	135@136	96@ 97	96@ 97
Caicho (Peruvian) sheet.....	none here	none here	none here

PLANTATION PARA.

Fine smoked sheet.....	190@191	133@134	138@139
Fine pale crepe.....	174@175	132@133	136@137
Fine sheets and biscuits.....	172@173	131@132	130@131

CENTRALS.

Esmeralda, sausage	118@119	84@ 85	86@ 87
Guayaquil, strip	none here	none here	none here
Nicaragua, scrap	116@117	84@ 85	84@ 85
Panama	none here	none here	none here
Mexican, scrap	115@116	83@ 84	83@ 84
Mexican, slab	none here	none here	none here
Mangabeira, sheet	none here	none here	none here
Guayule	72@ 73	43@ 44	45@ 46
Balata, sheet .....	.....@...	84@ 85	84@ 85
Balata, block .....	.....@...	63@ 65	63@ 64

AFRICAN.

Lopori, ball, prime.....	162@163	106@107	110@112
Lopori, strip, prime.....	170@...	none here	none here
Aruwimi	160@...	98@ 99	102@104
Upper Congo, ball red.....	158@159	101@102	110@112
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality.....	155@156	98@ 99	92@ 93
Massai, red	155@156	92@ 93	93@ 94
Soudan Niggers	none here	91@ 92	none here
Cameroon, ball	95@ 96	65@ 66	70@ 71
Benguela	none here	70@ 71	none here
Madagascar, pinky	none here	80@ 81	83@ 84
Accra flake	none here	30@ 31	30@ 31

EAST INDIAN.

Assam	none here	81@ 82	84@ 85
Pontianak	6 1/4@6 1/2	6 1/4@6 1/2	6 1/4@6 1/4
Borneo	none here	none here	none here

Late Pará cables quote:

	Per Kilo.	Per Kilo.
Islands, fine.....	4\$700	Uriver, fine..... 6\$000
Islands, coarse.....	2\$400	Uriver, coarse
Exchange	16 3/16d.	.....

Latest Manáos advices:

Uriver, fine	6\$200	Exchange	16 3/16d.
Uriver, coarse	4\$300	.....	.....

NEW YORK PRICES FOR JULY (NEW RUBBER).

	1911.	1910.	1909.
Uriver, fine	\$.99@1.17	\$2.16@2.40	\$1.50@1.95
Uriver, coarse	82@ .96	1.48@1.55	1.05@1.20
Islands, fine .....	.92@1.10	2.08@2.25	1.41@1.48
Islands, coarse .....	.58@ .63	.98@1.03	.70@ .75
Cameta .....	.70@ .75	1.10@1.23	.80@ .92

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: The situation in commercial paper is not much changed from a month ago, when we reported a good demand for the best rubber names at 4@4 1/2 per cent., and those not so well known 5@5 1/2 per cent.; except that the demand is increasing somewhat, as usual at this time of the year, and 4 1/2@5 per cent. are now the lowest rates for the best rubber names, and 5 1/2@5 3/4 per cent. for others.

African Rubbers.

NEW YORK STOCKS (IN TONS).

July 1, 1910.....	120	February 1, 1911	115
August 1	250	March 1	111
September 1	300	April 1	98
October 1	375	May 1	98
November 1	100	June 1	90
December 1	140	July 1	90
January 1, 1911	115	August 1	90

Para.

R. O. AHLLERS & Co. report [August 1]:

The market remained stationary in accordance with news from consuming centers, buyers showing more interest at present, and sellers conserving a firm attitude.

R. O. AHLLERS & Co. report [August 11]:

The market remained quiet but steady, showing no features of interest.

Statistics of Para Rubber (Excluding Caucó).

NEW YORK.					
	Fine and Medium.	Total Coarse.	1911.	1910.	Total 1909.
Stocks, June 30.....tons	300	73	373	161	392
Arrivals, July	800	362	1,162	642	623
Aggregating	1,100	435	1,535	803	1,015
Deliveries, July	786	364	1,150	594	785
Stocks, July 31	314	71	385	209	230
PARA.					
	1911.	1910.	1909.	1911.	1910.
Stocks, June 30.....tons	3,785	300	245	1,775	1,460
Arrivals, July	1,150	1,500	760	72	680
Aggregating	4,935	1,800	1,005	1,847	2,140
Deliveries, July	1,485	1,315	455	447	1,000
Stocks, July 31.....tons	3,450	485	550	1,400	1,140
World's visible supply, July 31.....tons			1911.	1910.	1909.
Pará receipts, July 1 to July 31.....	5,981	2,373	1,300		
Pará receipts of caucho, same dates.....	1,150	1,500	760		
Afloat from Pará to United States, July 31	350	890	330		
Afloat from Pará to Europe, July 31....	216	219	none		
	530	320	275		

RUBBER STOCKS AT PARA.

Statistical returns for this year show stocks at Pará:

	tons.	tons.
June 31	2,085	May 31
February 28	3,787	June 30
March 31	4,214	July 31
April 30	5,104	August 28
Stock June 30.....		4,545
July receipts		1,400
		5,945
Shipments July to America.....	918	
Shipments July to Europe.....	1,143	2,061
Stock July 31		3,884 tons.

Of these 3,884 tons, 3,424 were in second hands, and 460 in first hands. There had been on July 31 a reduction of about 1,500 tons from the maximum of May 31.

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to July 17, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....pounds	635,855	1,351,590
To United States.....	594,834	900,921
To Belgium	25,472	213,719
To Japan		21,684
To Australia	1,099	19,374
To Germany	8,946	11,553
To Canada	1,911	9,971
To Italy	841	3,597
To France		117
To Holland		100
To India		85
Total	1,268,958	2,532,711

[Same period 1909—596,866 pounds; same 1908—350,897 pounds.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by BARLOW & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

	1909.	1910.	1911.
From Singapore (to June 30)	1,240,137	1,533,732	2,766,372
From Penang (to June 24)	1,436,128	1,006,176	2,055,652
From Pt. Swettenham (to June 23)		3,741,591	5,591,756

Total

2,676,265 6,281,499 10,413,780

LONDON.

The July advance has been maintained. During the earlier part of August, there was no lack of active inquiry for plantation rubber, but owing to the firmness of importers, business was more or less restricted. This was specially the case in prime Crepe Latex. In Balata demand was quiet, but importers maintained quotations.

An interesting feature of the recent advance has been the progress displayed at the close of each week, notwithstanding intermediate fluctuations. Spot prices for fine hard Pará were:

WEEKLY MOVEMENT OF LONDON PRICES:

[In shillings and pence per pound.]

May 31	3/11	July 14	4/5½
June 2	4/1	July 21	4/7
June 9	4/1	July 28	4/8
June 16	4/1½	August 4	4/7½
June 23	4/1½	August 11	4/7½
June 30	4/1½	August 18	4/7½
July 7	4/2½		

ENGLISH RUBBER STATISTICS FOR JULY, 1911.

	Imports.	Deliveries.	1909.	1910.	July 31.
	tons.	tons.	tons.	tons.	tons.
London.					
Plantation and Malay	718	753	173	686	660
Rangoon and Assam	19	40	11	47	28
Penang	12	10	75	106	128
Borneo	7	22	54	102	137
Malay	89	81	...	...	104
Mozambique	32	43	34	177	129
Madagascar	5	2	5	16	19
West Indies and South America	19	23	107	125	149
Maltograsso	25	51	31	32	134
Africa	69	23	33	98	179
Various	1	1	10	5	5
Tons	995	1,049	524	1,399	1,672
Liverpool					
Pará	481	1,295	247	1,125	2,486
Caucó	258	369	933	597	609
Mollendo	16	15	1	...	3
Manicoba, etc.	144	68	85	172	351
Carthagena, etc.	120	114	288	263	384
Tons	1,019	1,861	1,554	2,157	3,833
Total (England) tons, July 31..	2,014	2,910	2,078	3,556	5,505
Total (England) tons, July 31..	2,536	2,355	2,046	4,361	6,401
By latest cable advises the equivalent of \$1.16@\$1.18 had been bid for Pará up-river fine. It is reported that English manufacturers hold smaller stocks of rubber than had been anticipated.					
Liverpool.					
WILLIAM WRIGHT & Co. report [August 1]:					
<i>Fine Pará.</i> —The market has been characterized by more trade activity, both here and in America; weak holders seem to have been cleared out. Considerable shipments have again been made to America, and, with small receipts, prices have steadily advanced (in the early part of the advance a large business was done on private terms) from 4s. to 4s. 8½d., closing steady at latter price. The so-called syndicate stock in Brazil is still unsold. It is reported that satisfactory arrangements have been made with the Bank to hold for a further length of time. However, it must be sold some time; until it is out of the way the market will be more or less nervous. Whether the financial difficulties of the Brazilian Aviadores will affect the quantity of the new crop remains to be seen, but the tone of the market at the close indicates a good demand, about 4s. 5d. to 4s. 6d. Receipts for the month are small, being 1,420 tons, including 260 tons Caucó, against 1,720 tons last month, and 2,330 tons, including 830 tons Caucó, in July, 1910. Deliveries for the month are 1,116 tons, against 1,392 tons last month, and 1,544 tons last year.					

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

Massachusetts Chemical Co., Walpole, Mass.

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WALPOLE VARNISH WORKS
ELECTRIC INSULATION LABORATORY

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Old Rubber

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Yarns for every purpose
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Headquarters for

Surinam and Demerara Sheet Balata
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Ceylon Plantation Rubber

97 WATER STREET

NEW YORK

British Crude Rubber Statistics.

OFFICIAL STATEMENT—JANUARY 1 TO JUNE 30.

	WEIGHTS.	1909.	1910.	1911.
Imports	pounds	39,866,960	56,279,888	52,346,896
Exports		21,635,936	29,237,152	29,984,416
Net imports		18,231,024	27,042,736	22,362,480
	VALUES.			
Imports		£6,282,294	£16,280,980	£10,415,368
Exports		3,804,399	8,448,898	6,731,945
Net imports		£2,477,895	£7,832,082	£3,683,423

BORDEAUX.

Recent advices from Bordeaux indicate that rubber is arriving on a smaller scale than was the case a year ago. May arrivals amounted to 148,250 kilos., as compared with 205,500 kilos. for the corresponding month of 1910. Somewhat closer figures mark the returns for June, which show 159,120 kilos., against 170,705 kilos. for June, 1910.

Business had been quiet in African rubbers, the prices at which importers held their stocks being considered too high in proportion to those of Pará descriptions. The position of the latter had impeded important transactions in other kinds.

BORDEAUX RUBBER IMPORTATIONS.

Comparative results covering the first six months of this and last year are as follows:

		1910.	1911.
January	Kilos	294,600	144,105
February		329,260	265,050
March		265,125	241,385
April		261,980	227,185
May		205,500	148,250
June		170,705	159,120
Total—January-June		1,527,170	1,185,095

Soudan sorts and Conakry niggers constituted the largest proportion of recent imports.

HAVRE.

Importers have felt encouraged by the result of the July rubber auction, at which 61,618 kilos. were sold out of 62,739 kilos. offered. The average advance in price obtained over previous auction represented 7.58 per cent. For the August sale a quantity of about 80 tons had been declared. A fresh advance of 5@8 per cent. was established.

ANTWERP.

During the interval between the June and July sales, prices had stiffened; these conditions being reflected in the advance which took place at the latter, which equalled 10.10 per cent. on Congo descriptions and 14.20 per cent. on plantation rubbers. This movement was in sympathy with the course of the Havre July auction.

Out of 460,475 kilos. offered, 350,501 kilos. were sold, the separate quantities being:

	Offered.	Sold.
Congo descriptions	Kilos	396,168
Plantation descriptions		28,075
Various descriptions		36,232
Total		460,475
		350,501

For the August sale 235 tons had been declared. Telegraphic reports of sale indicate a further advance of 5@8 per cent. An important reduction in stock has been effected.

ANTWERP RUBBER STATISTICS FOR JULY.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, June 30...kilos	773,977	460,517	476,420	684,866	671,793
Arrivals in July.....	263,051	249,899	529,920	227,202	613,064
Congo sorts.....	198,520	144,697	461,506	172,828	559,144
Other sorts.....	64,531	105,202	68,414	54,374	53,920
Aggregating.....	1,037,028	710,416	1,006,340	912,068	1,284,857
Sales in July.....	571,294	190,451	481,828	216,517	353,501
Stocks, July 31.....	465,734	519,965	524,512	695,551	931,356
Arrivals since Jan. 1.	2,484,073	2,335,107	2,933,424	2,833,027	3,191,798
Congo sorts.....	1,841,113	1,800,323	2,177,715	2,430,364	2,753,722
Other sorts.....	642,960	534,784	755,709	402,663	436,076
Sales since Jan. 1....	2,606,551	2,356,652	3,004,647	3,144,370	2,918,626

RUBBER ARRIVALS FROM THE CONGO.

AUGUST 3.—By the steamer *Elizabethville*:

Bunge & Co.....	(Société Générale Africaine) kilos	62,000
Do.....	(Comptoir Commercial Congolais)	21,000
Do.....	(Chemins de fer Grands Lacs)	340
Do.....	(Cie. du Kasai)	32,200
Do.....	(Belgika)	320
Société Coloniale Anversoise.....	(Belge du Haut Congo)	480
Do.....	(Cie. du Lomami)	4,900
Do.....	(Société Comm. and Miniere du Congo)	2,390
Do.....	(Sud. Cameroun)	25,800
L. & W. Van de Velde (Société Comm. and Financ.)	Africaine)	2,000
Willaert Frères		1,000
Société Générale de Commerce.....	(Alimainenne)	750
		153,180

AMSTERDAM.

About one-half of the rubber offered at the July sales met with ready sale at higher prices. *Hevea* plantation rubber commanded an advance upon valuations of 10 per cent. The relatively large proportion being unsold is attributed to the high prices asked by importers. The next sale will take place on September 29.

F. JOOSTEN reports [August 15]:

Our market remained very firm, with good demand. Several, partly important, lots were sold at good prices. Fine *Hevea* grades are very scarce, but some newly arrived Rambong lots are up for sale.

HAMBURG.

Latest advices report a firm market, showing but little change. Buyers are gradually advancing their limits.

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

AUGUST 1.—By the steamer *Rio Janeiro*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	10,400	1,400	68,000	.....	= 79,800
De Lagotellerie & Co.....	15,300	3,600	35,000	.....	= 53,900
New York Commercial Co. ....	.....	.....	20,500	1,300	= 21,800
Total.....	25,700	5,000	123,500	.....	1,380=155,500

AUGUST 3.—By the steamer *Denis*, from Manáos and Pará:

Poel & Arnold.....	84,600	13,400	78,800	67,400=244,200
New York Commercial Co.	22,000	7,900	26,500	45,000=101,400
A. T. Morse & Co.	25,200	3,300	27,700	400= 56,600
Hagemeyer & Brunn.....	9,300	.....	2,000	.....= 11,300
Total.....	141,100	24,600	135,000	112,800=413,500

AUGUST 15.—By the steamer *Boniface*, from Manáos and Pará:

Poel & Arnold.....	134,700	75,400	131,000	97,700=420,800
New York Commercial Co.	102,700	36,200	72,000	66,800=277,700
A. T. Morse & Co.	58,800	5,000	44,400	34,400=142,600
Hagemeyer & Brunn.....	24,300	1,000	19,200	.....= 44,500
De Lagotellerie & Co.	16,800	2,900	23,100	.....= 42,800
Total.....	337,300	120,500	289,700	180,900=928,400

AUGUST 23.—By the steamer *Sao Paulo*, from Pará:

	11,500	700	23,100	.....= 35,300
New York Commercial Co.	11,500	700	23,100	.....= 35,300
G. Amsinck & Co.	4,300	11,200	4,200	700= 20,400
Hagemeyer & Brunn....	4,300	.....	4,000	.....= 8,300
Total.....	20,100	11,900	31,300	700= 64,000

AUGUST 24.—By the steamer *Clement*, from Manáos and Pará:

Poel & Arnold.....	144,800	42,100	121,600	7,200=315,700
New York Commercial Co.	96,800	17,500	24,800	16,500=155,600
A. T. Morse & Co.	24,600	700	29,500	.....= 54,800
General Rubber Co.	42,800	1,300	14,600	.....= 58,500
Hagemeyer & Brunn.....	9,600	.....	3,300	.....= 12,900
Total.....	318,400	61,600	193,800	23,700=597,500

PARA RUBBER VIA EUROPE.

JULY 26.—By the *Coronia*=Liverpool:
General Rubber Co. (Fine)..... 155,000
Poel & Arnold (Fine)..... 48,000
Raw Products Co. (Fine)..... 4,500
Poel & Arnold (Coarse)..... 11,000
Raw Products Co. (Coarse)..... 7,000 225,500

JULY 26.—By the *Grenada*=Bolivar:
Iglesias Lobo & Co. (Fine)..... 20,000
American Trading Co. (Fine)..... 7,000
Iglesias Lobo & Co. (Coarse)..... 9,000 36,000

JULY 28.—By the *Mauretania*=Liverpool:
Poel & Arnold (Fine)..... 225,000
New York Com'cial Co. (Fine)..... 34,000
General Rubber Co. (Coarse)..... 33,500 292,500

JULY 29.—By the *Kaisers Auguste Victoria*=Hamburg:
New York Commercial Co. (Coarse)..... 17,000

JULY 31.—By the *Celtic*=Liverpool:
General Rubber Co. (Fine)..... 90,000
C. P. dos Santos (Fine)..... 11,500
Robinson & Co. (Fine)..... 9,000
Muller, Schall & Co. (Fine)..... 10,000
N. Y. Commercial Co. (Fine)..... 7,000
Rubber Trading Co. (Fine)..... 9,000
Muller, Schall & Co. (Caucho)..... 15,000 151,500

AUGUST 2.—By the *Thames*=Mollendo:
A. T. Morse & Co. (Caucho)..... 11,500

AUGUST 7.—By the *Amerika*=Hamburg:
Wallace L. Gough Co. (Fine)..... 17,000
Muller, Schall & Co. (Coarse)..... 7,000 24,000

AUGUST 7.—By the *Batavia*=Hamburg:
Wallace L. Gough Co. (Fine)..... 13,500
N. Y. Commercial Co. (Fine)..... 8,000
N. Y. Commercial Co. (Coarse)..... 2,500

AUGUST 9.—By the *Grenada*=Bolivar:
General Export & Comm. Co. (Fine)..... 21,000

AUGUST 9.—By the *Carmania*=Liverpool:
Poel & Arnold (Fine)..... 330,000
Raw Products Co. (Fine)..... 15,000
N. Y. Commercial Co. (Fine)..... 11,000
N. Y. Commercial Co. (Coarse)..... 5,500 361,500

AUGUST 9.—By the *Columbia*=Liverpool:
A. T. Morse & Co. (Fine)..... 28,000

AUGUST 11.—By the *Cedric*=Liverpool:
General Rubber Co. (Coarse)..... 60,000
C. P. dos Santos (Fine)..... 11,000 71,000

AUGUST 12.—By the *Campagna*=Liverpool:
General Rubber Co. (Coarse)..... 22,500
Raw Products Co. (Coarse)..... 22,500
A. W. Brunn (Coarse)..... 9,000 54,000

AUGUST 17.—By the *Trent*=Mollendo:
General Rubber Co. (Fine)..... 22,500
General Rubber Co. (Caucho)..... 30,000 52,500

AUGUST 18.—By the *Pennsylvania*=Hamburg:
Poel & Arnold (Coarse)..... 22,500
N. Y. Commercial Co. (Coarse)..... 8,000
Rubber Trading Co. (Fine)..... 10,000 40,500

AUGUST 18.—By the *Mauretania*=Liverpool:
Poel & Arnold (Fine)..... 45,000
Raw Products Co. (Fine)..... 11,500
Henry A. Gould Co. (Fine)..... 5,500
A. T. Morse & Co. (Fine)..... 5,500
James J. Johnston (Coarse)..... 11,500
W. H. Stiles (Coarse)..... 11,000
N. Y. Commercial Co. (Caucho)..... 1,000 91,000

AUGUST 18.—By the *Baltic*=Liverpool:
General Rubber Co. (Fine)..... 60,000
W. H. Stiles (Fine)..... 4,500
General Rubber Co. (Coarse)..... 11,000 75,500

AUGUST 22.—By the *Coppename*=Bolivar:
General Exp. Comm. Co. (Fine)..... 8,000
General Exp. Comm. Co. (Coarse)..... 4,500 12,500

AUGUST 23.—By the *President Grant*=Hamburg:
Robert Badenhoff (Fine) 7,000

AUGUST 24.—By the *Allianca*=Mollendo:
New York Commercial Co. (Fine)..... 10,000

OTHER NEW YORK ARRIVALS.
CENTRALS.

[*This sign, in connection with imports of Cents, denotes Guayule rubber.]

JULY 25.—By the *Colon*=Colon:
G. Amsinck & Co. *27,000
Chas. E. Griffin *2,500
Isaac Brandon & Bros. *1,500
Jose Julia & Co. *1,000 *32,000

JULY 27.—By the *El Norte*=Galveston:
Continental-Mexican Rubber Co. *80,000

JULY 28.—By the *Prins August Wilhelm*=Colon:
G. Amsinck & Co. 4,000
A. Santos & Co. 2,500
Jose Julia & Co. 2,500
Roldau & Van Sickle. 2,000
A. Rosenthal & Sons. 1,000
J. Sambrada & Co. 1,000 13,000

JULY 28.—By the *El Rio*=Galveston:
Continental-Mexican Rubber Co. *155,000

JULY 29.—By the *Esperanza*=Vera Cruz:
Charles A. Sykes 2,500
Iglesias Lobo & Co. 5,500
Lawrence Import Co. 1,500
General Export Co. 2,500
E. Steiger & Co. 1,000
H. Marquardt & Co. 1,000 14,000

JULY 31.—By the *Prinz Sigismund*=Colon:
G. Amsinck & Co. 7,000
A. M. Capen's Sons. 5,500
Roldau & Van Sickle. 2,500
Pablo, Calvert & Co. 2,000
Isaac Brandon & Bros. 1,000 18,000

AUGUST 2.—By the *Eastern Prince*=Bahia:
J. H. Rossbach & Bros. 13,500

AUGUST 4.—By the *El Occidente*=Galveston:
Continental-Mexican Rubber Co. *75,000

AUGUST 7.—By the *Morro Castle*=Frontera:
A. T. Morse & Co. 5,000
Lawrence Import Co. 4,000
E. Nelson Tibals & Co. 1,000
Harburger & Stack. 1,500 11,500

AUGUST 7.—By the *Panama*=Colon:
G. Amsinck & Co. 8,500
Hirzel, Feltman & Co. 3,000
Isaac Brandon & Bros. 3,000
Charles E. Griffin 2,000
Mecke & Co. 2,000
Jose Julia & Co. 1,000 19,500

AUGUST 7.—By the *Allemannia*=Colombia:
Maitland, Coppell & Co. 6,000
A. Jarlanillo & Co. 1,500
Caballero & Blanco. 1,500
R. Del Castillo & Co. 1,500
A. Held 1,000
G. Amsinck & Co. 1,000
Kunhardt & Co. 1,000 13,500

AUGUST 7.—By the *Amerika*=Hamburg:
Geo. A. Alden & Co. 11,500
A. T. Morse & Co. 5,500 17,000

AUGUST 8.—By the *Segurana*=Tampico:
Ed. Maurer *90,000
For Antwerp *33,000 *123,000

AUGUST 9.—By the *Prinz Joachim*=Colon:
G. Amsinck & Co. 3,500
Andean Trading Co. 1,500
J. A. Pauli & Co. 1,500
Graham, Hinkley & Co. 1,000
Gillespie Bros. & Co. 1,000
Isaac Brandon & Bros. 1,000 9,500

AUGUST 9.—By the *Cowhus*=New Orleans:
Manhattan Rubber Mfg. Co. 3,500
George A. Alden & Co. 2,500
A. T. Morse & Co. 1,500
T. W. Morgan 1,000 8,500

AUGUST 9.—By the *Oceanic*=London:
Poel & Arnold 20,000

AUGUST 9.—By the *El Mundo*=Galveston:
Continental-Mexican Rubber Co. *75,000
Charles T. Wilson & Co. *8,000 *83,000

AUGUST 10.—By the *Camagney*=Tampico:
Ed. Maurer *45,000
For Antwerp *35,000 *78,000

AUGUST 11.—By the *Monterey*=Frontera:
Harburger & Stack. 4,500
E. Steiger & Co. 3,500
A. T. Morse & Co. 2,000
Maldonado & Co. 1,500
Lawrence Import Co. 1,000 12,500

AUGUST 11.—By the *Matanzas*=Tampico:
Ed. Maurer *135,000
J. W. Wikson & Co. *3,500
For Antwerp *82,000 *220,500

AUGUST 14.—By the *Advance*=Colon:
G. Amsinck & Co. 19,500
Isaac Brandon & Bros. 10,500
Schutte, Bunemann & Co. 4,500
Andean Trading Co. 2,500
Mecke & Co. 2,500
Suzarte & Whitney 2,500
Jose Julia & Co. 1,500
Pablo, Calvert & Co. 1,000
A. Held 1,000 45,500

AUGUST 15.—By the *El Sol*=Galveston:
Continental-Mexican Rubber Co. *115,000
Charles T. Wilson & Co. *3,500 *118,500

AUGUST 15.—By the *Creole*=New Orleans:
Manhattan Rubber Mfg. Co. 8,000
G. Amsinck & Co. 5,000
George A. Alden & Co. 4,000
A. T. Morse & Co. 2,000 19,000

AUGUST 15.—By the *Indian Prince*=Bahia:
A. Hirsch & Co. 55,000
Poel & Arnold 22,500
New York Commercial Co. 22,500 100,000

AUGUST 17.—By the *Fert*=Colombia:
Cortes Commercial Co. 1,500
A. M. Capen's Sons. 1,000
G. Amsinck & Co. 1,000
R. Del Castillo & Co. 1,000
Isaac Brandon & Bros. 1,000 5,500

AUGUST 18.—By the *Mauretania*=Liverpool:
Poel & Arnold 8,000

AUGUST 21.—By the *Albingia*=Colombia:
Scholz & Marturet 2,000
R. Gallegor & Co. 1,500
A. Jarlanillo & Co. 1,000
G. Amsinck & Co. 1,000 5,500

AUGUST 21.—By the *Vigilancia*=Tampico:
New York Commercial Co. *200,000
Ed. Maurer *90,000
For Antwerp *5,000 *295,000

AUGUST 22.—By the *Byron*=Bahia:
New York Commercial Co. 22,500

AUGUST 22.—By the *Antilles*=New Orleans:
Robinson & Co. 8,000
A. N. Rothholz 3,000
A. T. Morse & Co. 3,500
T. W. Morgan 1,500 16,000

AUGUST 23.—By the *El Valle*=Galveston:
Continental-Mexican Rubber Co. *40,000

AUGUST 24.—By the *Allianca*=Colon:
Isaac Brandon & Bros. 15,000
G. Amsinck & Co. 15,000
F. H. Feltman & Co. 5,000
Dumarest Bros. & Co. 4,000
Jose Julia & Co. 1,500 40,500

AFRICAN.

JULY 26.—By the *Coronia*=Liverpool:
Poel & Arnold 15,000
Muller, Schall & Co. 4,500 19,500

JULY 28.—By the *Carolina*=Havre:
Rubber Trading Co. 18,000

JULY 29.—By the *Kaisers Auguste Victoria*=Hamburg:
George A. Alden & Co. 58,000
General Rubber Co. 4,500 62,500

JULY 31.—By the *Celtic*=Liverpool:
James T. Johnstone 6,000

JULY 31.—By the *Philadelphia*=London:
General Rubber Co. 34,000
Muller, Schall & Co. 11,000 45,000

AUGUST 3.—By the *Vaderland*=Antwerp:
A. T. Morse & Co. 128,000
Raw Products Co. 7,000 135,000

AUGUST 5.—By the *Virginia*=Havre:
Poel & Arnold 65,500
Rubber Trading Co. 11,000 76,000

AUGUST 7.—By the *St. Louis*=London:
George A. Alden & Co. 77,000

AUGUST 7.—By the *Lapland*=Antwerp:
A. T. Morse & Co. 4,500
Raw Products Co. 3,500 8,000

AUGUST 7.—By the *Minnetonka*=London:
Raw Products Co. 11,000

AUGUST 7.—By the *Amerika*=Hamburg:
Poel & Arnold 50,000
George A. Alden & Co. 30,000
A. T. Morse & Co. 9,000
Rubber Trading Co. 8,000
Robert Badenhoff 3,700 100,700

AUGUST 7.—By the *Batavia*=Hamburg:
George A. Alden & Co. 45,000
Wallace L. Gough & Co. 34,000
A. T. Morse & Co. 22,500 101,500

AUGUST 8.—By the *Niagara*=Havre:
General Rubber Co. 34,000
Rubber Trading Co. 2,000 36,000

AUGUST 8.—By the *Fert*=Lisbon:
George A. Alden & Co. 22,500

AUGUST 9.—By the <i>Carmania</i> —Liverpool: General Rubber Co. 22,500 James T. Johnstone. 13,500 A. T. Morse & Co. 11,500 Poel & Arnold. 11,500 George A. Alden & Co. 5,500	AUGUST 7.—By the <i>St. Louis</i> —London: New York Commercial Co. *16,000 Poel & Arnold. 9,000	AUGUST 24.—By the <i>Indre</i> —Singapore: Wallace L. Gough Co. 220,000 W. R. Russell & Co. 90,000 L. Littlejohn & Co. 220,000
AUGUST 11.—By the <i>Cedric</i> —Liverpool: A. T. Morse & Co. 7,000 James T. Johnstone. 5,500	AUGUST 7.—By the <i>Lapland</i> —Antwerp: A. T. Morse & Co. *50,000	GUTTA-PERCHA. POUNDS.
AUGUST 15.—By the <i>Kroonland</i> —Antwerp: A. T. Morse & Co. 115,000 Rubber Trading Co. 90,000 New York Commercial Co. 33,000 Wallace L. Gough & Co. 22,500 Poel & Arnold. 22,500 Muller, Schall & Co. 15,000 W. H. Stiles. 11,000 Robert Badenhoef. 7,000 Robinson & Co. 4,500 Raw Products Co. 2,500	AUGUST 7.—By the <i>Minnetonka</i> —London: A. T. Morse & Co. *16,000 Ed. Maurer. 7,000 Charles T. Wilson. 5,000 James T. Johnstone. 3,000	AUGUST 21.—By the <i>Dacre Castle</i> —Singapore: Haebler & Co. 22,500
AUGUST 18.—By the <i>Pennsylvania</i> —Hamburg: George A. Alden & Co. 45,000 General Rubber Co. 33,000 Rubber Trading Co. 8,000 Poel & Arnold. 5,500	AUGUST 7.—By the <i>Batavia</i> —Hamburg: New York Commercial Co. *7,000	AUGUST 24.—By the <i>Indre</i> —Singapore: L. Littlejohn & Co. 45,000 Poel & Arnold. 11,000
AUGUST 18.—By the <i>Baltic</i> —Liverpool: Muller, Schall & Co. 15,000 General Rubber Co. 15,000 A. T. Morse & Co. 11,500 James T. Johnstone. 8,000 Poel & Arnold. 5,500	AUGUST 9.—By the <i>Carmania</i> —Liverpool: Ed. Maurer. *17,000	BALATA. POUNDS.
AUGUST 21.—By the <i>Bretagne</i> —Havre: Muller, Schall & Co. 22,500	AUGUST 9.—By the <i>Oceanic</i> —London: New York Commercial Co. *45,000 Poel & Arnold. 8,000 A. T. Morse & Co. 5,000 Poel & Arnold. 45,000	JULY 26.—By the <i>Grenada</i> —Trinidad: American Trading Co. 10,000
AUGUST 23.—By the <i>Finland</i> —Antwerp: A. T. Morse & Co. 55,000 Wallace L. Gough & Co. 20,000 Muller, Schall & Co. 7,000	AUGUST 9.—By the <i>Vandalia</i> —Singapore: Haebler & Co. 22,500 L. Littlejohn & Co. 11,000 Wallace L. Gough Co. 11,000	AUGUST 7.—By the <i>Minnetonka</i> —London: Wallace L. Gough Co. 30,000
AUGUST 24.—By the <i>President Grant</i> —Hamburg: Wallace L. Gough & Co. 60,000 Ed. Maurer. 30,000 George A. Alden & Co. 25,000 Robert Badenhoef. 15,000 General Rubber Co. 13,500 Raw Products Co. 9,000	AUGUST 11.—By the <i>Cedric</i> —Liverpool: C. P. dos Santos. 15,000	AUGUST 8.—By the <i>Saramaca</i> —Demerara: Middleton & Co. 7,000 Ed. Maurer. 7,000
EAST INDIAN. [*Denotes plantation rubber.]	AUGUST 15.—By the <i>Kroonland</i> —Antwerp: Rubber Trading Co. *65,000	AUGUST 9.—By the <i>Grenada</i> —Bolivar: American Trading Co. 13,500 G. Amsinck & Co. 10,000
JULY 28.—By the <i>Majestic</i> —London: Poel & Arnold. *15,000 New York Commercial Co. *7,000	AUGUST 16.—By the <i>Olympic</i> —London: A. T. Morse & Co. *36,000 Michelin Tire Co. *25,000 New York Commercial Co. *15,000 James T. Johnstone. 7,000 Poel & Arnold. 5,000 Robinson & Co. 18,000 Poel & Arnold. 7,000	AUGUST 15.—By the <i>Marowijne</i> —Bolivar: Middleton & Co. 20,000 Schutte, Bunemann & Co. 35,000 G. Amsinck & Co. 11,000 Ed. Maurer. 11,500
JULY 31.—By the <i>Philadelphia</i> —London: Poel & Arnold. *45,000 New York Commercial Co. *11,500 Poel & Arnold. 5,000 C. P. dos Santos. 11,000	AUGUST 18.—By the <i>Pennsylvania</i> —Hamburg: New York Commercial Co. *7,000 Rubber Trading Co. *7,000 Robert Badenhoef. 6,750	AUGUST 22.—By the <i>Coppenname</i> —Demerara: Middleton & Co. 8,000 Ed. Maurer. 3,500 De Sola Bros. & Pardo. 2,000
AUGUST 1.—By the <i>Minneapolis</i> —London: A. T. Morse & Co. *45,000 Poel & Arnold. *45,000 Michelin Tire Co. *22,500 James T. Johnstone. *3,500 Robinson & Co. 22,500	AUGUST 18.—By the <i>Baltic</i> —Liverpool: W. H. Stiles. 4,500 C. P. dos Santos. 13,500	CUSTOM HOUSE STATISTICS. PORT OF NEW YORK—JULY.
AUGUST 3.—By the <i>Vaderland</i> —Antwerp: A. T. Morse & Co. *55,000	AUGUST 23.—By the <i>Finland</i> —Singapore: Poel & Arnold. 11,000 Haebler & Co. 5,500 A. W. Brunn. 5,000	Imports. Pounds. Value. India-rubber 6,025,440 \$4,973,622 Balata 172,712 122,132 Gutta-percha 95,517 22,813 Gutta-jelutong (Pontianak) 3,180,154 155,032 Guayule 461,153 226,806
AUGUST 3.—By the <i>Adriatic</i> —London: Poel & Arnold. *7,000	AUGUST 25.—By the <i>Kasembe</i> —Colombo: A. T. Morse & Co. *56,000 New York Commercial Co. *30,000 Poel & Arnold. 10,000	Exports. Pounds. Value. India-rubber 110,303 \$91,536 Balata 5,099 3,682 Gutta-percha 21,026 9,014 Guayule 134,060 20,069
AUGUST 5.—By the <i>Argenfels</i> —Colombo: A. T. Morse & Co. *64,000 Poel & Arnold. 7,000 H. W. Peabody & Co. 1,000	AUGUST 3.—By the <i>Afghan Prince</i> —Singapore: L. Littlejohn & Co. 325,000 W. R. Russell & Co. 135,000	Rubber scrap, imported.... 1,282,873 \$111,525 Rubber scrap, exported.... 174,502 29,345
AUGUST 3.—By the <i>Adriatic</i> —London: Poel & Arnold. *55,000	AUGUST 9.—By the <i>Vandalia</i> —Singapore: L. Littlejohn & Co. 350,000 Manhattan Rubber Mfg. Co. 150,000 Haebler & Co. 200,000 Wallace L. Gough Co. 175,000 W. R. Russell & Co. 55,000 George A. Alden & Co. 55,000	BOSTON ARRIVALS. POUNDS.
AUGUST 21.—By the <i>Dacre Castle</i> —Singapore: L. Littlejohn & Co. 350,000 George A. Alden & Co. 220,000 Poel & Arnold. 100,000 Wallace L. Gough Co. 150,000 W. R. Russell & Co. 100,000	JULY 1.—By the <i>Kennebec</i> —Singapore: State Rubber Co. (East India). 2,800 L. Littlejohn & Co. (Jelutong). 345,000 State Rubber Co. (Jelutong). 850,000	
AUGUST 21.—By the <i>Muncaster Castle</i> —Singapore: State Rubber Co. (East India). 3,300 Poel & Arnold (East India). 9,000 Wallace L. Gough Co. (Jelutong). 160,000	JULY 19.—By the <i>Muncaster Castle</i> —Singapore: State Rubber Co. (East India). 2,800 Poel & Arnold (East India). 9,000 Wallace L. Gough Co. (Jelutong). 172,300	

PARA EXPORTS OF INDIA-RUBBER, JUNE, 1911 (IN KILOGRAMS).

NEW YORK.							EUROPE.						
EXPORTERS.	Fine.	Medium.	Coarse.	Cauch.	TOTAL.	Fine.	Medium.	Coarse.	Cauch.	TOTAL.	TOTAL.		
Gruner & Co.	145,437	34,712	141,417	39,094	360,660	124,470	21,720	51,567	90,041	287,798	648,458		
Suarez Hermanos & Co., Ltd.						152,469	3,334	20,371		221,448	221,448		
Ad. H. Alden, Ltd.	44,334	5,463	28,110	14,397	92,304	8,213	2,876	1,852		44,103	57,044		
De Lagotteray & Co.	17,510	5,270	18,810	.....	41,590	10,880	.....	.....	43,890	54,770	96,360
Pires, Teixeira & Co.	9,690	.....	27,390	.....	37,080	38,080	.....	13,530		51,610	88,690
R. O. Ahlers & Co.						32,354	.....	6,559	3,244	42,157	42,157	
Gordon & Co.						26,099	4,264	2,512	7,453	40,328	40,328		
A. de la Rivière & Co.			1,650	.....	1,650	.....	.....	.....		.....	1,650
Sundries						3,944	170	7,590	.....	11,704	11,704	
Itacoatiara, direct.						1,280	160	960		2,400	2,400		
Manáos, direct.	161,936	32,345	70,537	117,875	382,693	142,175	44,262	68,156	234,622	489,215	871,908		
Iquitos, direct.						8,400	166	1,530	52,061	62,157	62,157		
Total, June, 1911.....	378,907	77,790	287,914	171,366	915,977	548,364	76,952	174,627	520,681	1,320,631	2,236,608		
Total, May, 1911.....	357,379	71,911	434,788	150,926	1,015,004	793,143	117,028	185,709	631,898	1,727,778	2,742,782		
Total, April, 1911.....	389,417	99,628	332,154	287,232	1,128,431	823,960	114,300	185,785	589,224	1,713,269	2,841,700		
Total, March, 1911.....	268,926	71,692	283,502	76,499	700,619	1,349,885	176,348	399,138	551,188	2,476,559	3,177,178		
Total, February, 1911.....	462,123	111,594	454,235	113,921	1,141,873	1,477,804	201,533	330,181	608,595	2,618,113	3,759,988		
Total, January, 1911.....	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,433	4,143,025	5,107,309		



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[Reinforced Rubber, Transparent Rubber, International Congress of Applied Chemistry, Synthetic Rubber.]

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[With 3 Illustrations.]

Shall Crude Rubber Be Listed?

[With 1 Illustration.]

New Rubber Goods in the Market.

[Artistic Rubber Sundries. A New "Stepney" Tire, Yachting and Polar Boots. The Fish "Clincher" for Bicycles. A Rubber Cigar Holder. Rubber Basin for Motorists. The Victor Carriage Mat. Painting Rack for Golf Balls. Pneumatic Mattresses. Hard Rubber Tire Holders. Rubber Bands Instead of Hat Pins. A New Woodworth Tread. Rubber Goods for Infants. The Ridge Okonite. For Cleaning Rubber Tires. Hard Rubber Connectors. Rubber Makes it Safe.]

The "Akron" Dirigible Balloon.

[With 3 Illustrations.]

Recent Patents Relating to Rubber.

[United States, Great Britain, France.]

Miscellaneous:

Mr. Reimers Then and Now	Illustrated
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Japanese Views of Rubber Culture	
Rubber Stamps in Pottery Decoration	Illustrated
"Para Versus Ceylon"	Illustrated
Brazil and the Middle East	
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India-Rubber and Balata in Dutch Guiana	Our Regular Correspondent

[Our Regular Correspondent]

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[Illustrated]

Rubber Tire Protection

India-Rubber Goods in Commerce.

A Man in a Million.

New Trade Publications

Asbestos Rubber Goods

News of the American Rubber Trade.

The Trade at Akron	Our Correspondent
The Trade in San Francisco	Our Correspondent
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Review of the Crude Rubber Market

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United States Imports of Crude Rubber.

OFFICIAL STATEMENT—FISCAL YEARS ENDING JUNE 30.

	1908-09.	1909-10.	1910-11.
United Kingdom	12,825,192	15,556,981	15,953,233
Belgium	3,635,990	3,813,702	4,473,202
France	1,967,774	3,695,703	3,157,879
Germany	4,503,286	6,528,147	6,151,752
Portugal	1,882,882	1,996,530	1,752,468
Central America	861,636	1,424,449	1,342,939
Mexico	15,460,365	23,486,384	853,805
Brazil	43,993,670	39,510,920	31,020,764
Other South America	1,964,114	2,503,683	2,506,875
East Indies	1,127,686	2,419,956	4,624,457
Other Countries	137,300	108,226	208,886
Total	88,359,895	101,044,681	72,046,260
Import value	\$61,709,723	\$101,078,825	\$77,244,603
Average per pound	69.8 cents	\$1.00	\$1.07

Net Imports.

Imports	1908-09.	1909-10.	1910-11.
1908-09.	1909-10.	1910-11.	1910-11.
88,359,895	101,044,681	72,046,260	72,046,260

Exports	3,791,961	6,492,947	5,267,588
3,791,961	6,492,947	5,267,588	5,267,588

Net imports	84,567,934	94,551,734	66,778,672
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OTHER UNITED STATES IMPORTS.

	1908-09.	1909-10.	1910-11.
Balata	1,157,018	399,003	399,003
Gutta-percha	255,559	784,501	1,648,921
Waste rubber	20,497,695	37,364,671	26,948,000
Gutta-jelutong	24,826,296	52,392,444	51,420,872
Guayule gum	19,749,522	19,749,522	19,749,522

Guayule gum

	Aug. 1.	Sept. 1.
Old rubber boots and shoes—domestic	9 @ 9 1/2	9 @ 9 1/2
Old rubber boots and shoes—foreign	9 @ 9 1/2	9 @ 9 1/2
Pneumatic bicycle tires	4 1/2 @ 4 3/4	4 1/2 @ 4 3/4
Automobile tires	8 3/4 @ 8 1/2	8 3/4 @ 8 1/2
Solid rubber wagon and carriage tires	9 1/4 @ 9 3/4	9 1/4 @ 9 3/4
White trimmed rubber	11 @ 11 1/2	11 @ 11 1/2
Heavy black rubber	4 3/4 @ 5	4 3/4 @ 5
Air brake hose	4 1/2 @ 4 3/4	4 1/2 @ 4 3/4
Garden hose	1 1/4 @ 1 1/8	1 1/4 @ 1 1/8
Fire and large hose	2 3/4 @ 2 5/8	2 3/4 @ 2 5/8
Matting	7/8 @ 1	7/8 @ 1

RESULTS OF COFFEE VALORIZATION.

THE message of the President of the State of São Paulo shows that the Government has on hand 5,105,133 bags of coffee that the balance of bonds outstanding on July 1, 1911, was equal to \$46,735,400 gold. The Federal loan outstanding had been reduced on December 31, 1910, to the equivalent of \$13,961,970 gold.

DEATH OF AN OLD EMPLOYEE.

As a mark of respect to the memory of the late Dennis Mulquenney, more than thirty-two years in the employment of the Voorhees Rubber Manufacturing Company, Jersey City, the factory was shut down for the whole day of the funeral.

STATISTICS OF RUBBER, ETC., IMPORTS.

[Fiscal years ending June 30.]

	1908-09.	1909-10.	1910-11.
Pounds.	Value.	Pounds.	Value.
1,157,018	\$52,872	399,003	\$196,878
255,559	82,136	784,501	167,873
24,826,296	852,372	52,392,444	2,419,223
88,359,895	\$61,709,723	101,044,681	\$101,078,825
20,497,695	\$1,543,267	37,364,671	\$2,998,697

*Imports of Guayule gum were included in "India rubber" prior to July 1, 1910.)

1.

-11
233
202
879
752
468
939
805
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375
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